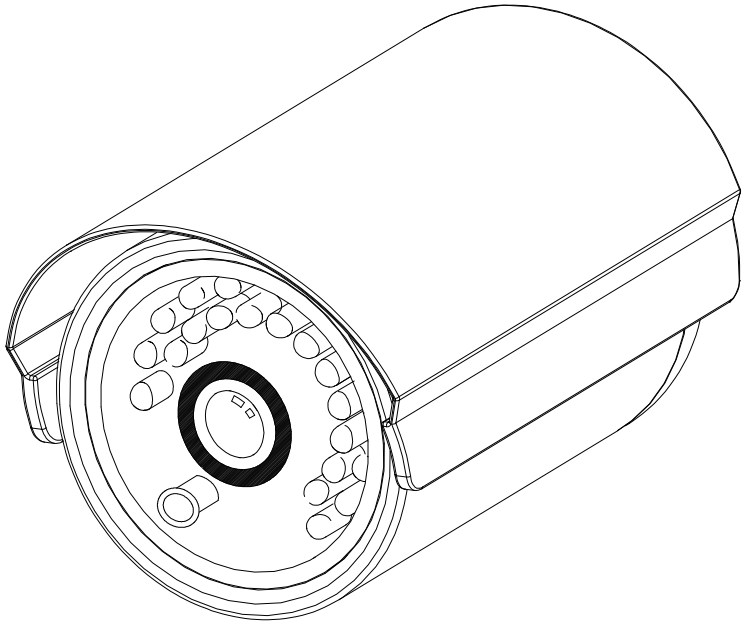
2 Megapixels

Infrared Bullet Network Camera User's Manual



VER.:1.5
F/W:1.0.1.3667

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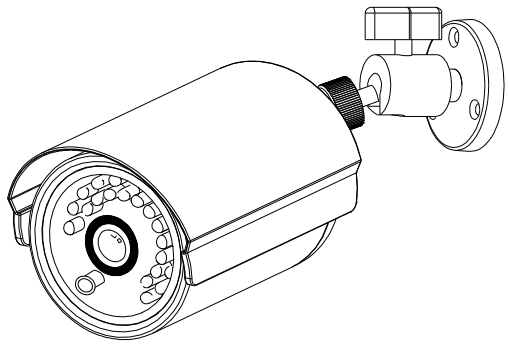
1 Overview

This camera is a high-end 2 MegaPixel Bullet Network Camera, which is designed for professional outdoor security applications. This network camera is equipped with removable IR-cut filter and Infrared LED, and provides outstanding day and night performance. It comes with a 2 MegaPixel CMOS Sensor, with a maximum resolution of 1600 x 1200, delivering sharp image quality. Furthermore, the dPTZ (Digital Pan/Tilt/Zoom) function allows user to navigate any area of the monitored image with maintained sharp resolution. With unique features, this network camera provides an ideal solution for surveillance and monitoring

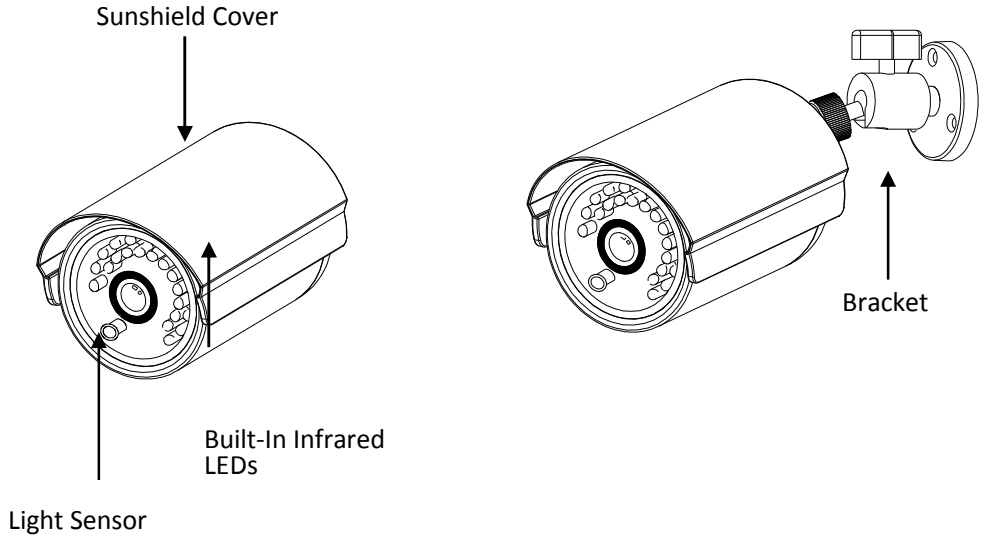
2 Product Description

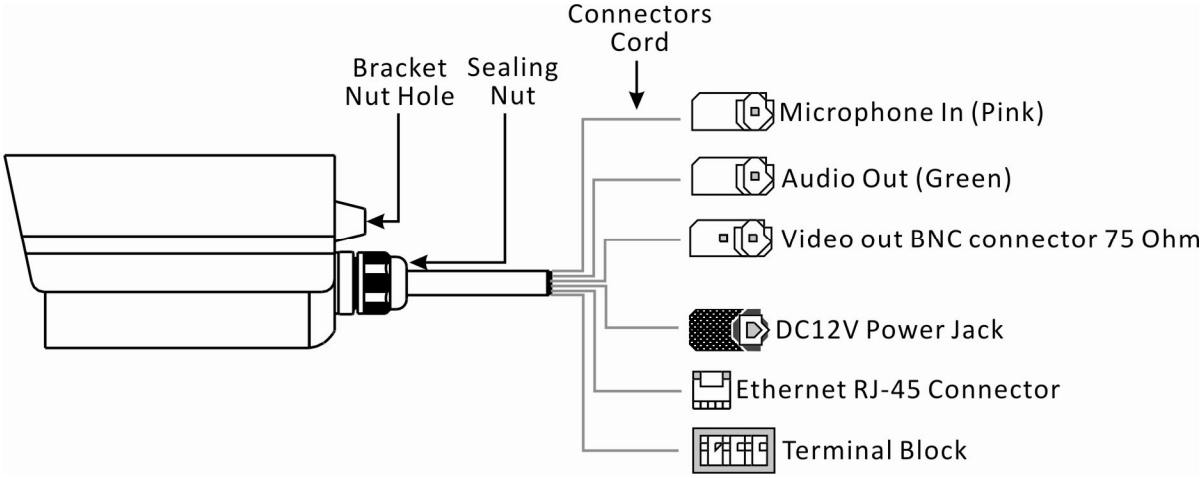


Key features

1. **H.264 High Profile / MJPEG Dual Compression:**
   Offers the user the option to select H.264 or MJPEG compression.
2. **ONVIF ® Compliant for Easy Integration & Fast Deployment:**
   Web services built-in with international standard protocols, integration cycles have been reduced and deployment has become easier. (Contact your distributor for documentation).
3. **Multiple video profiles simultaneously for streaming:**
   Streams up to 8 independent streams with multiple profiles.
   Different configurations can be set according to the bandwidth that is available from the network.
4. **Infrared LED for Day & Night Model, 20 Meters**
   There are 24 infrared LEDs located underneath the transparent cover.
5. **Micro SD Card Slot for Local Storage**
   For saving snapshots that can be later checked by the user, upon events occurred during motion detection.
6. **Analog Video BNC Out for Video Redundancy on Analog devices**
   The Network Camera has a video output with analog signal that allows connecting to analog monitors.
7. **Alarm In & Alarm Out for connecting Alarm Devices**
   The Network Camera comes with a Terminal Block for connecting alarms to execute actions upon it.
8. **Power-over-Ethernet IEEE 802.3 af for simplified connection (Optional)**
   Make installations simple with connecting only one cable without additional powering sources.
9. **Weather-proof IP66 rated housing**
   The camera can be shielded from rain and dust.

2.1 Hardware Description





- **Video out BNC Connector (75 Ohm)** for connecting analog monitor
- **Power Jack 12VDC** for connecting AC/DC power adapter
- **Ethernet RJ45 Port** for network connection
- **Terminal Block (6 pins)** for Digital In/Out and load default activation
- **Microphone In (Pink)** for connecting a microphone
- **Audio Out (Green)** for connecting a speaker

3 Setting up the Network Camera

3.1 Read Before Use

The use of surveillance devices may be prohibited by law in your country. The Network Camera is not only a high-performance web-ready camera but can also be part of a flexible surveillance system. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

It is important to first verify that all contents received are complete. Take note of the warnings in the Quick Installation Guide before the Network Camera is installed; then carefully read and follow the instructions in the Installation chapter to avoid damage due to faulty assembly and installation. This also ensures the product is used properly as intended. It is designed for various applications including video sharing, general security/surveillance, etc.

3.2 Hardware Installation Steps

After unpacking the package and identifying its parts, assemble the network camera to run the device for the first time.

It is recommended set up the camera before installing it to the intended location.

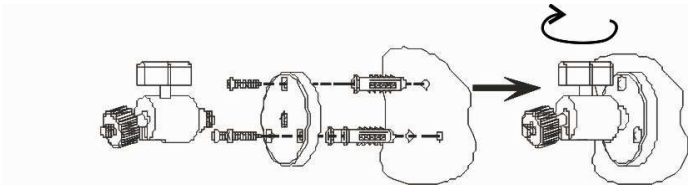
The following instructions will consist of basic steps that will help you through the hardware preparation.

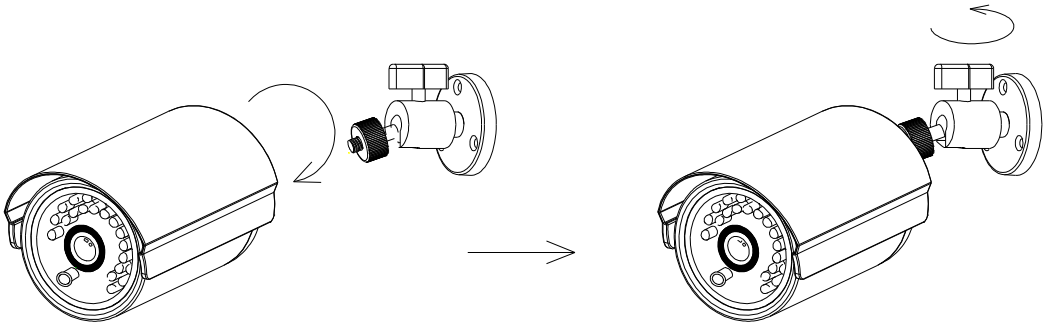
Other required devices before powering up the Network Camera:

1. Personal Computer or Laptop; and
2. Network Hub or Switch and 2 (two) pieces of Ethernet Cable; or
3. 1(one) piece of Crossover Ethernet Cable

STEPS:

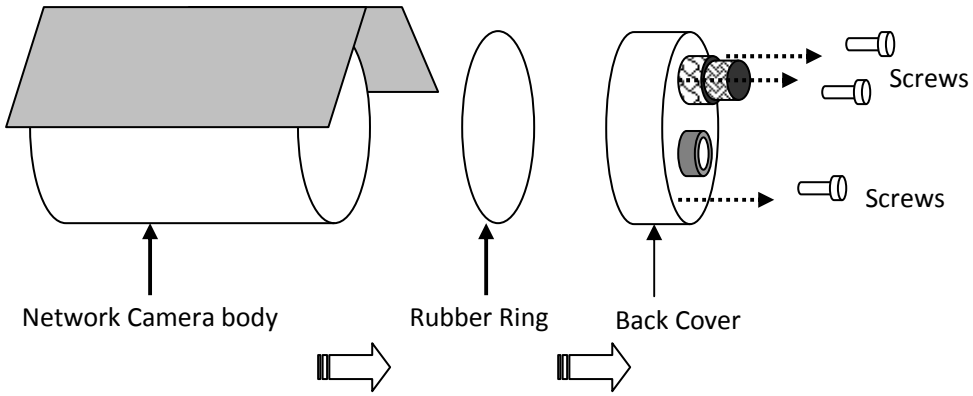
1. Attach the bracket that comes in the package to the Bracket Nut Hole
2. Connect the Ethernet Plug to the Network Connector RJ-45 from the device
   Plug the Power Jack to the Power Connector (For Network Cameras that are Power-over-Ethernet supported, the Power Adapter is not necessary)
3. After the Power Connector is plugged in, the Network Camera will boot up.
4. Wait a few seconds for the Network Camera to startup





3.3 Open the Housing

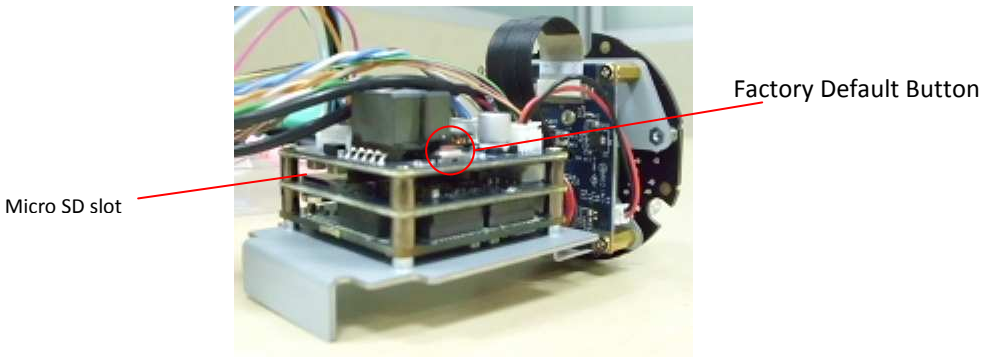
The Micro SD card slot and factory default button are located inside the Network Camera. It's required to open the back cover of the camera and use them.



Note:

1. Once the back cover has been removed, you will find a rubber ring slightly attached to the inner side of the body of the Network Camera. Don't lose the rubber ring as it is required to prevent water getting into the camera, as well as for a proper sealing and fitting of the back cover.
2. An additional rubber ring is included in package for spare.
3. It is suggested to reduce the opening of the camera since the unit is intended for outdoor usage.
4. It is recommended the contents of the card be read using from a remote connection. Please refer to the section "**5.3 Storage Settings**".

Rear View



3.4 Using the Micro SD Card

The network camera comes with a Micro SD card slot to allow users insert a Micro SD card to save snapshots and videos into it. Refer to **Chapter 5) Configuring the camera, Storage Settings and Event Settings**.

Before plugging / unplugging Micro SD card into / from the slot, it's recommended to turn the device off.

Note:

1. The device does not support Hot-Swapping function.
2. Tweezers is recommended to help insert the Micro SD card.

3.5 Using the Terminal Block

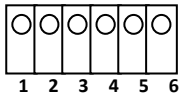
The network camera comes with a Terminal Block that can offer multiple functions to the user:

Pin 1 ~ 4: Intended for triggering and receiving alarms for the Event Configuration feature.

Pin 5, 6: Terminal block also provides 2 pins, Pin 5 and 6, for "load default". With 2 wires connected to Pin 5 & 6, keep 2 wires in touch until System LED fast flashing. Then, separate them to activate "load default".

Terminal Block Definition

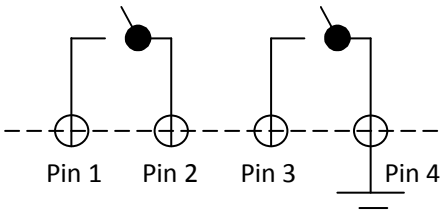
Pin 1	COM (Relay Common)
Pin 2	D-OUT (Relay Normal Open/Close)
Pin 3	D-IN (Digital Input)
Pin 4	GND (Ground)
Pin 5	GND (Ground)
Pin 6	DEFAULT (Load Default)



Connecting Alarm devices

Connect Pin 1 and Pin 2 for an external relay device such as an alarm that expects to be activated.

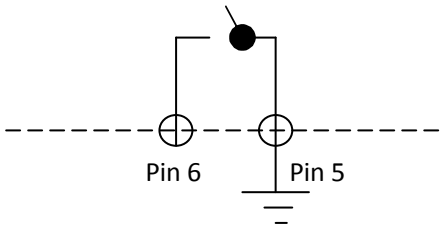
Connect Pin 3 and Pin 4 for an external Triggering device for sending a signal into the Network Camera.



Refer to Chapter 5) Configuring the camera, Event Settings for more references on how to use the even trigger and alarm to perform tasks such as taking snapshots and uploading images.

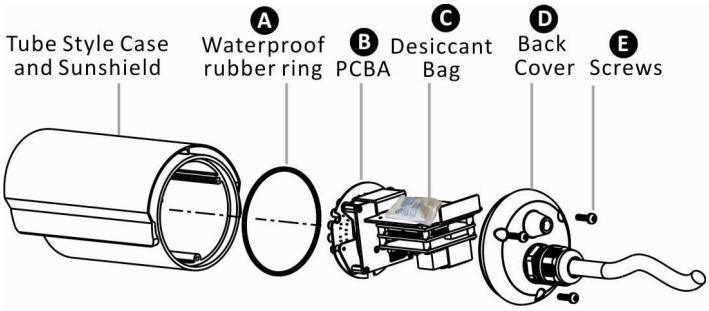
Load default

With 2 wires connected to Pin 5 & 6, keep 2 wires in touch (or close circuit) until System LED fast flashing. Then, separate (or open) them to activate "load default".

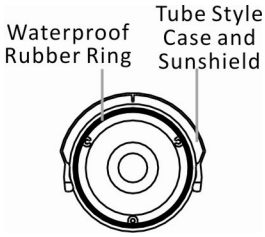


3.6 Re-install the Housing

When finishing Micro SD card installation or factory default, please re-install the parts as the following order (A to E) and end up with tightly fastening the screws.



A). To ensure water-proof function, do certainly locate the waterproof rubber in place (see the right figure) before installing the back cover.



B). Put the PCBA into the camera body.

C). Put the desiccant bag in.

D). Install the back cover.

E). Fasten the screws tightly.

Note:

1. There is one additional unopened desiccant (**silica gel**) inside the housing for spare.
2. To ensure fog-proof function, do replace the desiccant bag with a new one, when it's necessary to re-install the camera.
3. **Silica Gel** is the recommended desiccant type to ensure fog-proof function. If the desiccant bag is run out, please purchase and replace with this type.

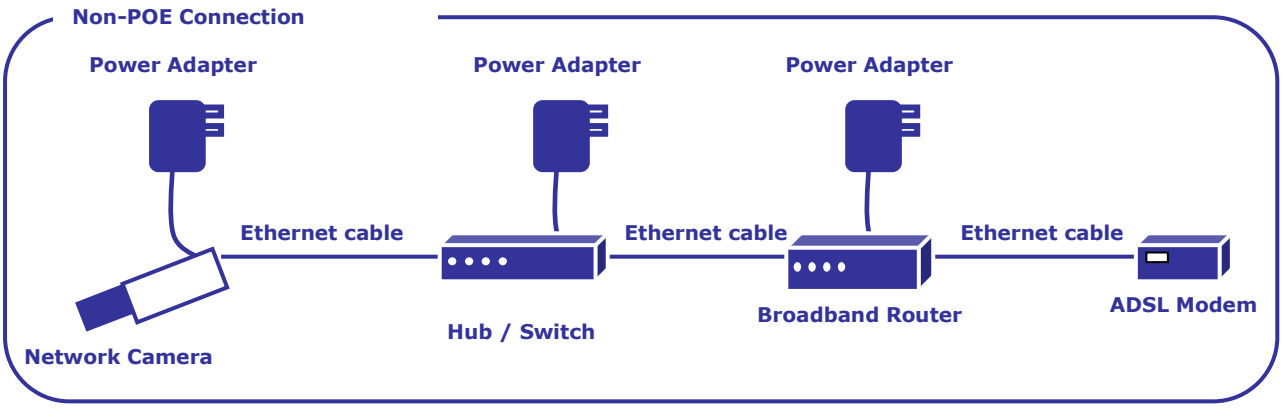
3.7 Network Connection for PoE/Non-PoE Cameras

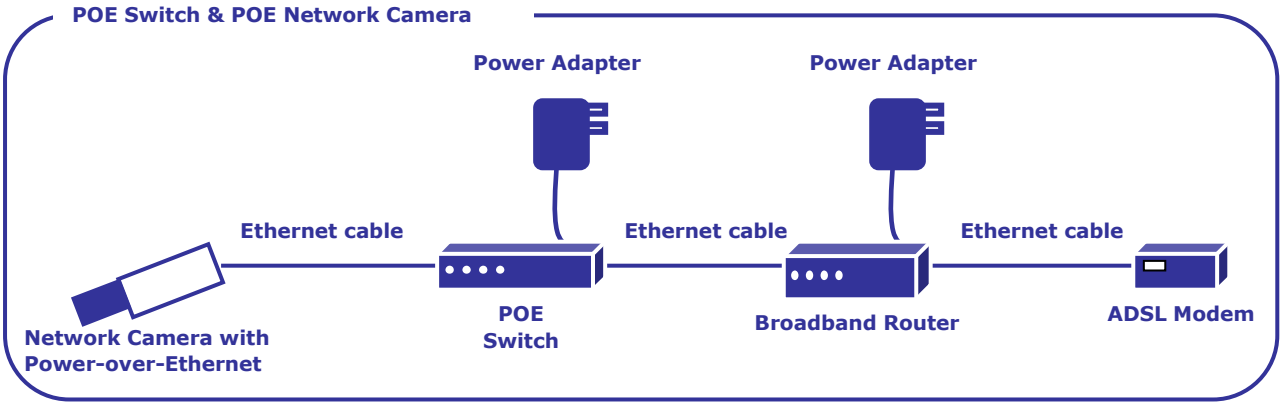
The Network Camera comes as an optional model which supports Power-over-Ethernet (PoE).

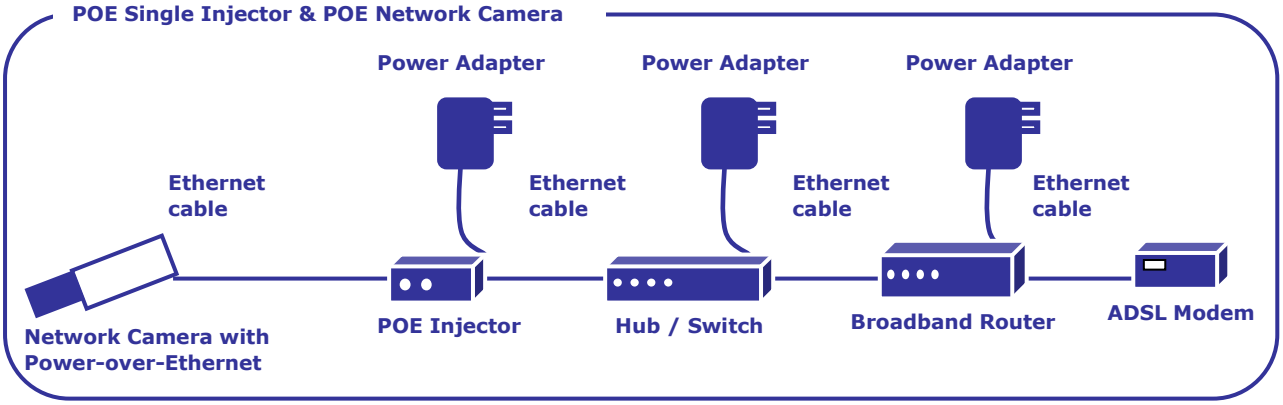
Using Power-over-Ethernet as power supplying mode, takes advantage of having a simple connection, with only one Ethernet Cable to act like Data and Power transmission. And it is not necessary to use any Power Adapter since the powering will be done directly through the Ethernet Connector.

Below a comparison between a Regular Ethernet connection and a connection using Network Camera with built-in Power-over-Ethernet.

> **Note:** For safety precautions, when using a PoE Video Encoder, ensure that the standard Power Connector has been removed before plugging the Ethernet cable (which is attached on the other end to a PoE Hub / Switch).







3.8 Using the Network Camera for the first time

The Network Camera is a network device and its use should be straightforward for those who have basic networking knowledge. Making the initial steps for setting up the network camera will be based on a simple network connection.

Option 1

Connect the network camera to a HUB / Switch which is connected to a PC

Option 2

Connect the network camera directly to a PC with a crossover cable.

After the network camera has its activity lights on, use the PC for setting up the IP Address of the Network camera. Refer to the section of "**Accessing the Network Camera"** at the next page for detailed instructions.

Hints: Possible Network Configurations in your network infrastructure

1. Configuration 1

Internet Access: ADSL or Cable Modem

IP address: One real IP or one dynamic IP

Connection Type: Only the Network Camera connects to the internet

For fixed real IP, set up the IP into the Network camera. For dynamic IP, start PPPoE.

2. Configuration 2

Internet Access: ADSL or Cable Modem

IP address: More than one real IP or one dynamic IP

Connection Type: The Network Camera and PC connect to the internet

Device needed: Switch Hub

For fixed real IP, set up the IP into the Network camera and PC. For dynamic IP, start PPPoE.

3. Configuration 3

Internet Access: ADSL or Cable Modem

IP address: one real IP or one dynamic IP

Connection Type: The Network Camera and PC connect to the internet

Device needed: IP sharing such as Hub / Switch and a Router

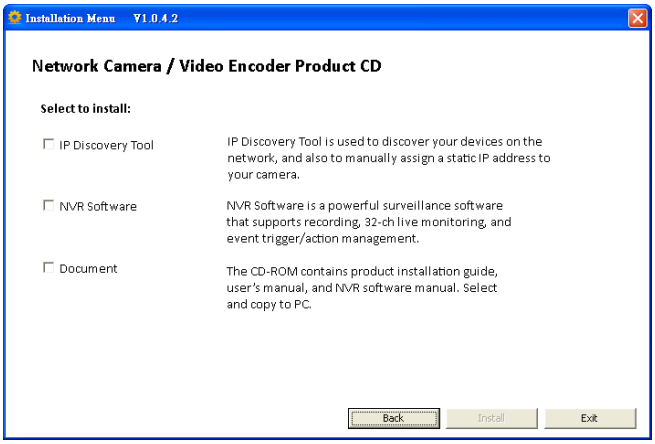
Use virtual IP, set up port forwarding in IP sharing.

(Suggestion: Refer to your Network Administrator if necessary for more information)

4 Accessing the Network Camera

Before getting access to the Network Camera from user's host PC, it's necessary to properly configure its network setting. This camera uses 192.168.1.200 as the default IP address. If you would like to assign a new static IP address, "IP Discovery Tool" is recommended.

First, insert the CD-ROM, which came with this camera, into your computer's CD/DVD drive and a program runs automatically to provide installation guide.


Installation Menu V1.0.4.2
Network Camera / Video Encoder Product CD
Select to install:
IP Discovery Tool
IP Discovery Tool is used to discover your devices on the network, and also to manually assign a static IP address to your camera.
NVR Software
NVR Software is a powerful surveillance software that supports recording, 32-ch live monitoring, and event trigger/action management.
Document
The CD-ROM contains product installation guide, user's manual, and NVR software manual. Select and copy to PC.
Back
Install
Exit

4.1 Finding the camera

IP Discovery Tool

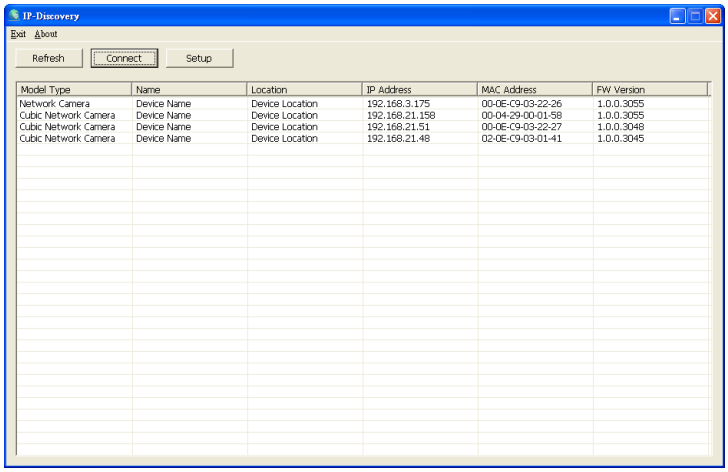
IP Discovery is the software that provides an easier way for setting the IP address and network configurations of the Network Camera. Using this tool, you can easily set multiple Network Cameras at the same time with the batch setting function. By utilizing the IP Discovery tool, the setting process is largely simplified and the setting time is effectively shortened. Moreover, IP Discovery cannot only save all the configurations of the Network Camera as a backup, but also it can restore the previous configurations of the Network Camera.

IPDIS

When proceeding to the second page of autorun program, select "**IP Discovery Tool**" to install "IP Discovery" from CD. Installer will guide you through the steps to install IP Discovery.

A. Once installed on the host PC, click on Windows screen [the **Start** Menu >> **All Programs** >> **Network Camera** >> **IP Discovery**] to open the software.

B. The software automatically (or by clicking on "**Refresh**") displays cameras on the network. Identify your camera by its MAC ID that is shown on the label of the camera.


IP-Discovery
Exit About
Refresh
Connect
Setup
Model Type Name Location IP Address MAC Address FW Version
Network Camera Device Name Device Location 192.168.3.175 00-0E-C9-03-22-26 1.0.0.3055
Cubic Network Camera Device Name Device Location 192.168.21.158 00-04-29-00-01-58 1.0.0.3055
Cubic Network Camera Device Name Device Location 192.168.21.51 00-0E-C9-03-22-27 1.0.0.3048
Cubic Network Camera Device Name Device Location 192.168.21.48 02-0E-C9-03-01-41 1.0.0.3045

This tool is only compatible to the camera with F/W version 1.0.0.3044 or above.

4.2 Before Assigning an IP Address

Make sure the Network Camera is powered on and correctly connected to the network.

Obtain a LAN IP address not yet used and its related configuration from your network administrator.

The following will be required:

1. IP Address
2. Subnet Mask
3. Gateway

MAC Address: Each Network Camera has a unique Ethernet address (MAC address) shown on the bottom of the Network Camera as the serial number (S/N) with 12 digits (e.g. 000410-XXXXXX) .

Hints: When assigning an IP Address

User can find necessary IP information by checking the current IP information of user's host PC via Windows command "ipconfig":

- Click on Windows screen: the **Start** Menu >> **All Programs** >> **Accessories** >> **Command Prompt**.
- Type "**ipconfig**" at the command prompt to show the current IP information of user's host PC.

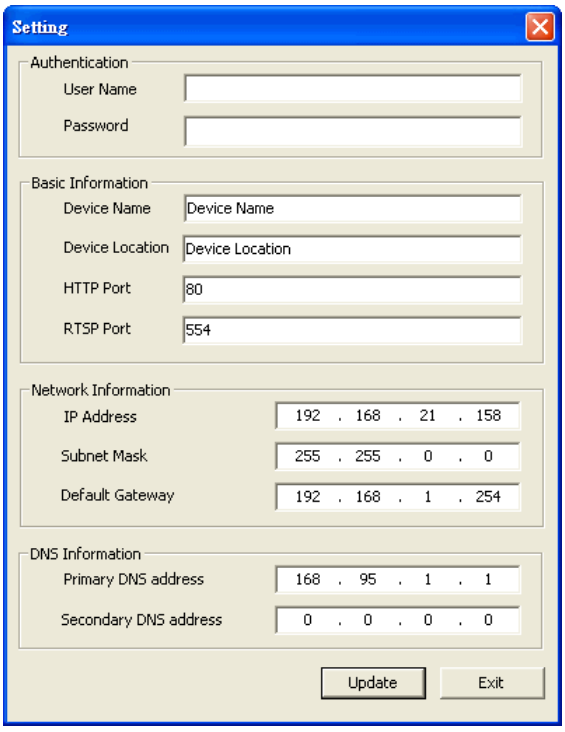
For example,

```
C:\ >ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connections:
        Connection-specific DNS Suffix  . : king-tech.com
        IP Address. . . . . . . . . . . . : 192.168.1.102
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.1.254
C:\ >
```

Then, use other IP address 192.168.1.xxx (1-253, except IP address of host PC 192.168.1.102), the same subnet mask 255.255.255.0 and default gateway 192.168.1.254 for the network camera.

4.3 Assigning the IP address to the network camera

Select a Network Camera and click on "**Setup**". Then, start to configure network settings, such as the following fields:



IP Address / Subnet Mask / Gateway

Click on "**Update**" to apply the changes only by using administrator's privilege (default user/password = admin/admin).

To open the main page of the network camera, select your camera and click on "**Connect**".

4.4 Access the camera from the browser

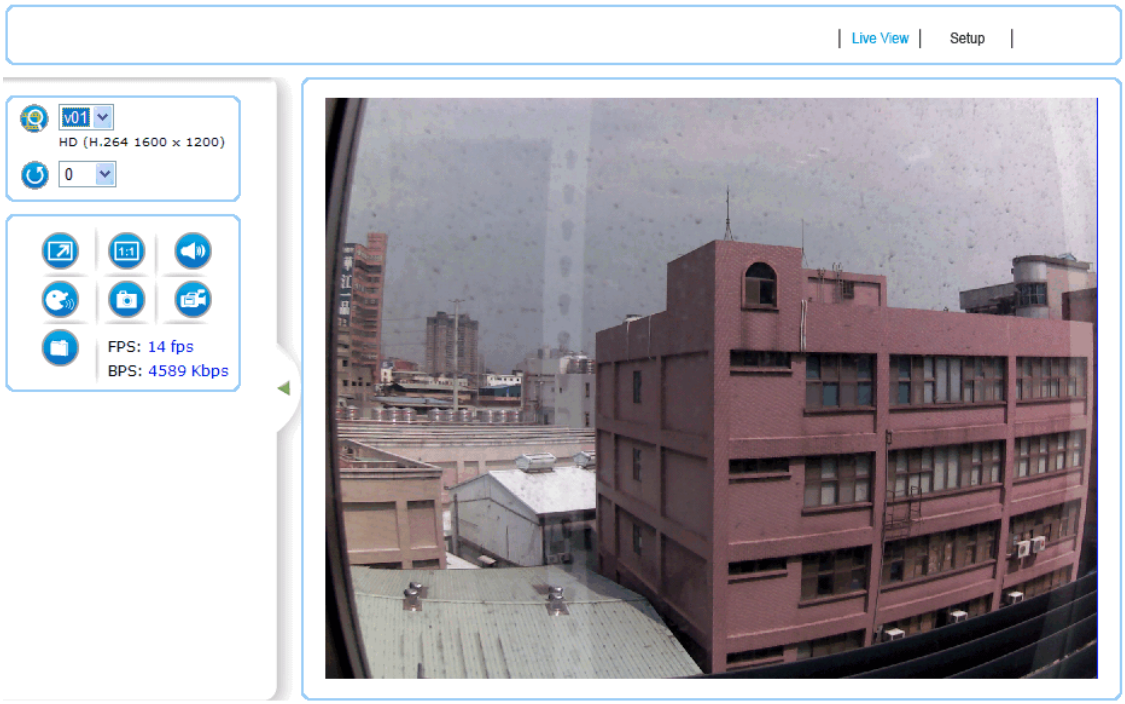
User can access this camera directly via Internet Explorer.

IP CAMERA - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.1.217/
This site might require the following ActiveX control: 'Hunt Verisign Control' from 'Hunt Electronic Co.,Ltd'. Click here to install...

Once the Network Camera is accessed, the Network Camera will request a Username and Password. The default Username and Password is “admin” and “admin”.

Connect to 192.168.1.200
The server 192.168.1.200 at Login requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
admin
Password:
Remember my password
OK
Cancel

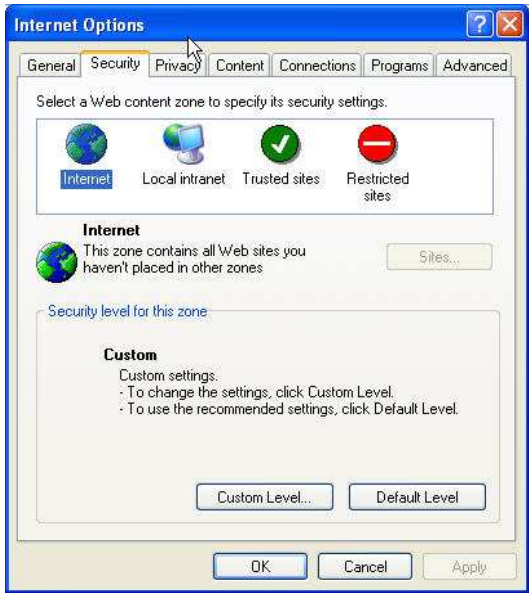
It will ask you to install the ActiveX component. Then, the Live View page will be shown.

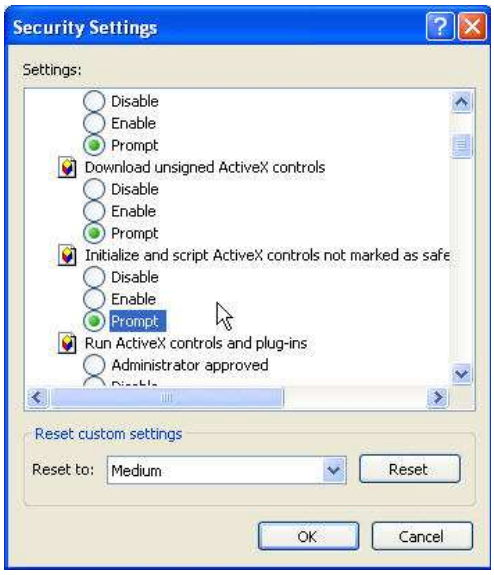


To adjust the Security Options of Internet Explorer follow the below instructions:

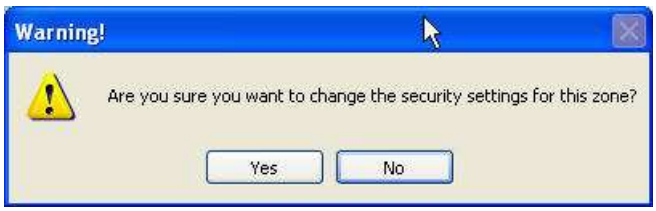
Internet Explorer > Tools > Internet Options > Security Tab > Custom Level > Security Settings > Download unsigned ActiveX controls > Select “Enable” or Prompt.

Internet Explorer > Tools > Internet Options > Security Tab > Custom Level > Initialize and script ActiveX controls not marked as safe > Select “Enable” or Prompt





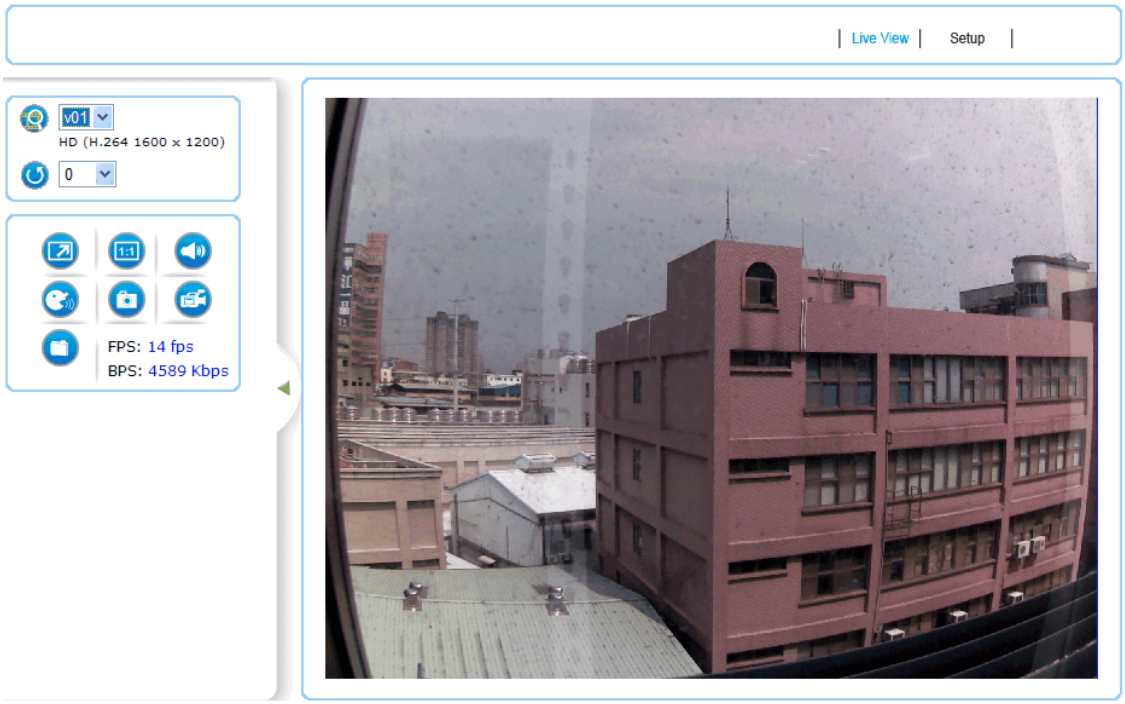
When popup the following dialogue box, click “Yes”



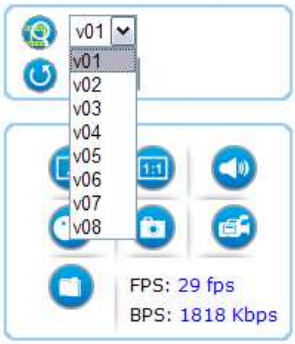
Hints: Changing the root password

To avoid security breaches, it is recommended changing the Username and Password once the device is set up to work. Refer to Chapter 5, Configuring the Camera, System Settings.

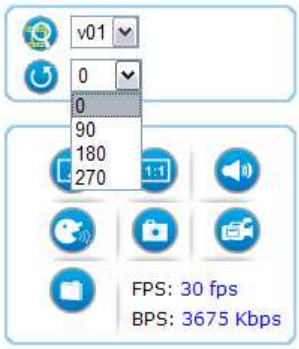
4.5 The Live View Page



Video Source: The Stream Profile drop-down list allows you to select a customized or pre-programmed stream profile on the Live View page. Refer to Streaming Settings of this chapter for more references.



Rotation: allows the rotation of the video to be viewed in an angle of 0 (current), 90, 180 or 270 degrees at a clockwise direction.



Full Screen: Maximizes the video to be displayed at a full screen size.

Real Size: Displays the real size of the video; (the initial video size will be adjusted to fit your monitor, while the real size could be bigger than it is being shown in the monitor).

Listen: allows the user from the PC listen the location where the camera is set.

Talk: allows the user from the PC talk remotely to the camera, for which the speaker will emit the voice.

Manual Record: Once pressed, it records and saves the currently viewed video the indicated path below. To stop the recording, press back the Recording button.

Snapshot: once clicked, it will take a snapshot and save it to the indicated path below.

Path Button: Sets the location where the video and snapshot are saved to. To change the location, click on the button and select the desired path.

FPS **Frames per Seconds:** Indicates the quantity of frames displayed in the current view.

BPS **Bit per second:** Indicates the bandwidth allocated for the streaming of the live video.

Click on the "**Setup**" link of the Live View page to change the configurations of the network camera.

Notes for Windows 7 Users:

For Window 7 users, the operating system requires users to configure the Internet Explorer administrator setting before the recording and snapshot functions can be enabled.

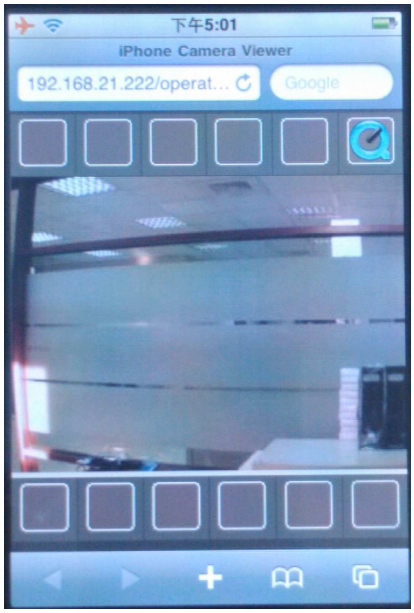
4.6 iPhone Camera Viewer

The network camera provides “iPhone Camera Viewer” for user to monitor via iPhone.

Once LAN or internet settings are completed on iPhone, as below, user can monitor via iPhone web browser by just entering the IP address (or domain name) of the network camera.

1). Go to “Settings” to complete network settings, such as WiFi, network (DCHP, BootP, or Static IP).

2). Go to “Safari” and enter the IP address (or domain name) of the network camera, which is followed by an authentication procedure (user/password = admin/admin). Then, Live video page “iPhone Camera Viewer” can be seen.



5 Configuring the camera

Video Main features and advanced configurations of video streaming.

Camera Image adjustments such as brightness, white balance and more.

Storage Displays information of the files located in the Micro SD card (if any).

Event Smart features for event settings to send emails, snapshots and more.

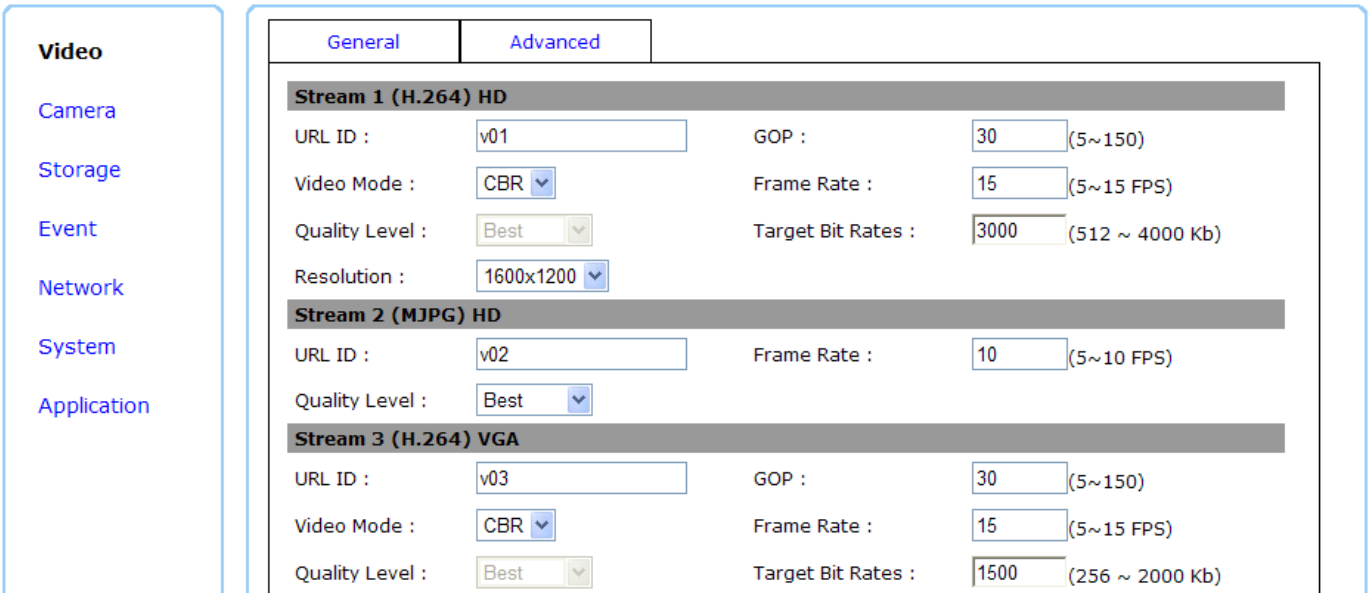
Network Network configuration for the network camera and Event features.

System Firmware version information and upgrade, User access management, and system information.

Application The network camera provides an application "Yoics" that features easy access to the network camera remotely from the Internet, avoiding the need of configuring the network devices.

5.1 Video Settings

The video settings page contains setting for the streaming



5.1.1 General Settings

Video General Setting:

The Network Camera has in total 8 independent and simultaneous streams which can be used.

Your requirements and the properties of your network will determine the type you use.

The Live View page in the network camera provides access to a list of streams which are set in this page.

They can either be H.264 or Motion JPEG video streams that are configured according to each user's need.

Other applications and clients can also access these video streams/images directly, without going via the Live View page.

Stream Types:

Stream 1, 3, 5 and 7: H.264

Stream 2, 4, 6 and 8: MJPEG

URL ID: Sets the name for the streaming; input an appropriate name to indicate the stream type which is being used.

Video Mode: CBR：512 Kbps ~ 4Mbps – Increase CBR to increase the picture quality; or vice versa

VBR：The network camera will adjust itself automatically to fit the best picture quality through the bandwidth provided by the network. The balance between VBR and network bandwidth will affect picture quality.

Quality Level: There are three levels to adjust: Best, Good and Standard

The higher the quality is, the more bandwidth it will use for streaming the video.

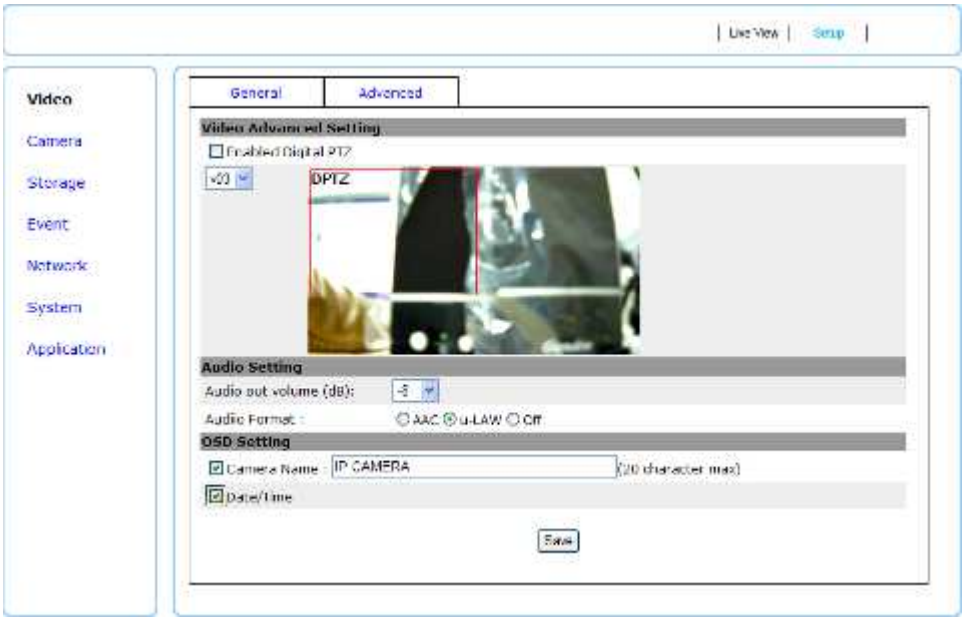
Resolution: You can set up a different video resolution for different viewing devices.

Note that a larger frame size takes up more bandwidth.

GOP: GOP stands for "Group of Pictures". The GOP is a group of successive pictures within a coded video stream.

Frame Rate: This limits the maximum refresh frame rate per second. Set the frame rate higher for smoother video quality.

5.1.2 Advanced Settings



Enable Digital PTZ: The Digital PTZ feature allows you pan, tilt and zoom electronically around the image without having moving parts at the device. Once enabled, it will display a frame which will let you slide it through different areas and automatically zoom the area being focused on, to have a bigger and more detailed image for your viewing.

The streams for using Digital PTZ are streams 3/4 and 5/6. Stream 3&4 or stream 5&6 will be enabled respectively when choosing v03 or v05. The naming of the streams by default are v03/04 and v05/06. Such naming can be changed in this same section of Video, going to the page of General settings.

Audio Setting

Adjust the output gain.

Audio Format: select “AAC”, “u-LAW” or “Off” as the audio compression format. The “u-LAW” is highly recommended for 3GPP mobile surveillance (for example, on iPhone or other network-enabled smart phones and NVR surveillance application software).

OSD Setting:

Camera Name: To display the OSD, type a text on the box with a maximum of 20 characters.

Date / Time: Displays the date and time on the video which is streamed from the Network Camera.

Save: Once the options have been selected, click on Save to make the changes permanent for the device.

Once you tick the box “Enable Digital PTZ” and click on save, you can return to “Live View” and use the navigation interface to browse around zoomed image area.

5.2 Camera Settings

5.2.1 Camera General Settings

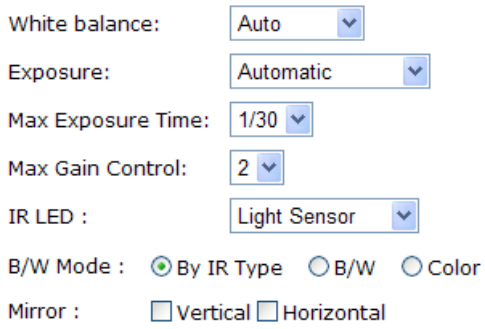
Brightness: The image brightness can be adjusted in the range 0-100, where a higher value produces a brighter image.

Hue: The image hue can be adjusted in the range 0-100, where a higher value produces more stimulus on the image.

Saturation: The image saturation can be adjusted in the range 0-100, where a higher value produces more neutral image.

Contrast: The image contrast can be adjusted in the range 1-5, where a higher value produces more difference in brightness between adjacent areas.

Video Output Format: Select for redundant output (analog monitor) to assign video signal “NTSC” or “PAL”.



White balance: This is used to compensate for the different colors present in different light sources, to make the colors in the image appear the same. The Network Camera can be set to automatically identify the light source and compensate for its color. Alternatively, the type of light source can be manually selected from the drop-down list.

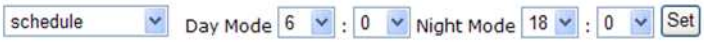
Exposure: Configure the exposure settings to suit the image quality requirements in relation to lighting, frame rate and bandwidth considerations. Values can be set to: Automatic, 50 or 60 kHz

Max Exposure Time: Select the exposure time for the camera for the duration of the time that gets into the sensor.

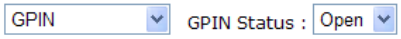
Max Gain Control: Select the level gain control for the camera

IR LED: Select “Light Sensor” to activate IR-cut filter (IR LED off) or remove it (IR LED on) automatically according to day or night vision.

Select “Schedule” to assign the starting time of day mode and night mode.



Select “GPIN” to set IR LED on and remove IR-cut filter automatically according to the GPIN status “Open” or “Close”.



Select “On” to always remove IR-cut filter and set IR LED on.

Select “Off” to always activate IR-cut filter and set IR LED off.

B/W Mode: Select “By IR Type” to present image automatically in color or monochrome, which is based on IR status. When IR is on, B/W mode is activated. When IR is off, B/W mode is disabled.

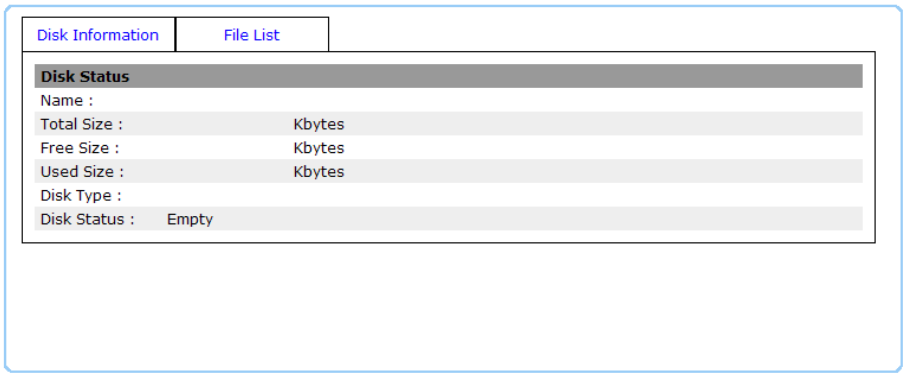
Select “B/W’ to present image in monochrome (black and white).

Select “Color” to present image in its original color.

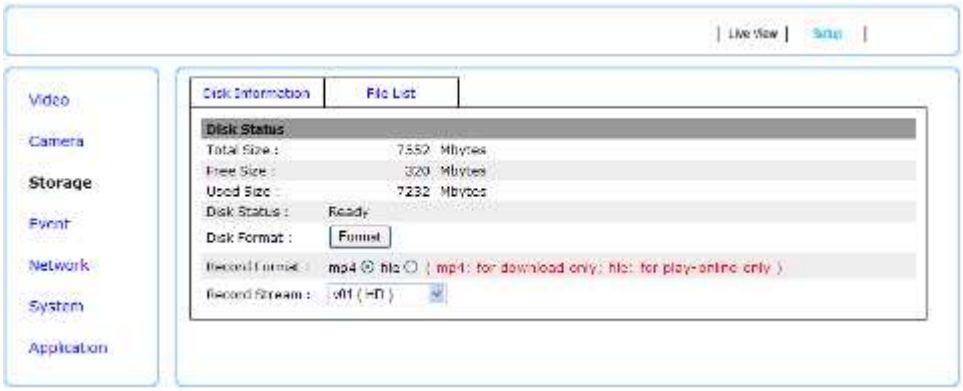
Mirror: Flips the video based on Vertical and Horizontal view.

5.3 Storage Settings

5.3.1 Disk Information



Displays information on the Micro SD Card inserted in the network camera that the user is working with, which will be useful for saving live videos and snapshots, lately used in the built-in live recording Schedule feature of this same section.



Below, a graphic representation of the page when a disk is inserted, with files store inside.

Click on “Format” to format the inserted Micro SD card.

Record Format:

Mp4 select to make .mp4 file for playing after download.

File select to make file for playing online.

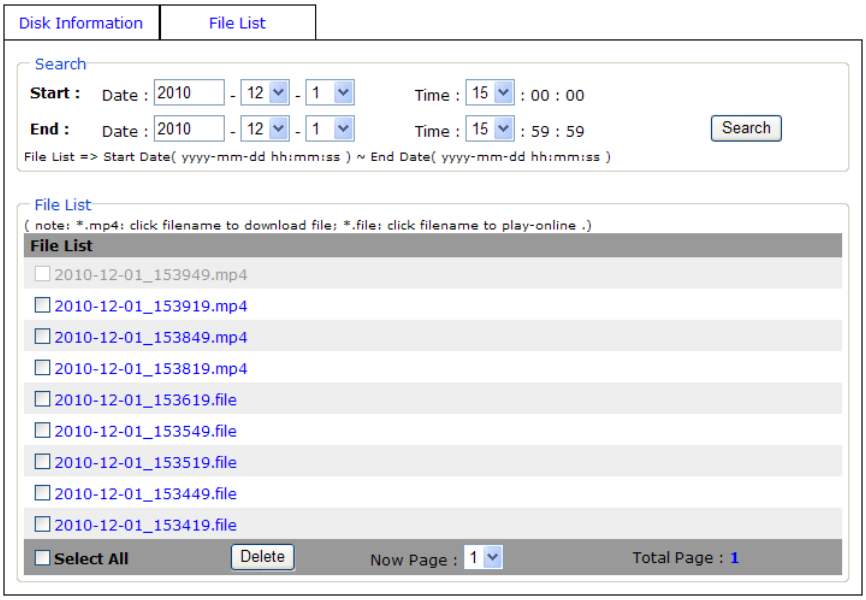
Record Stream:

Select v01, v03, v05 or v07 streaming which is H.264 (HD) compressed.

5.3.2 File list

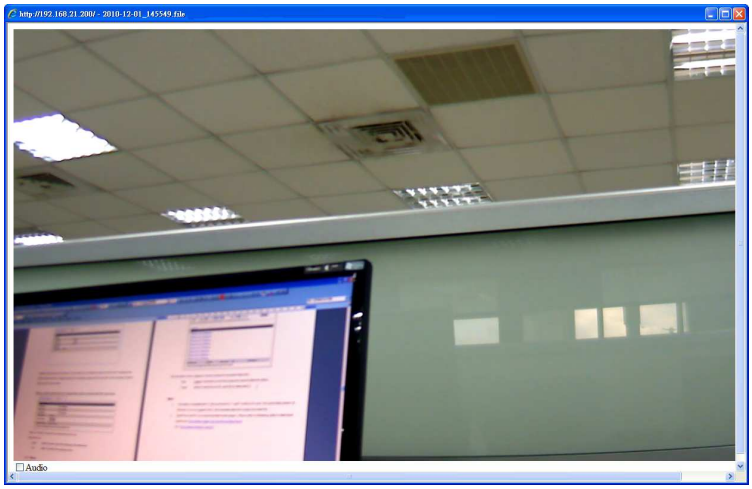
Displays the list of files which are stored in the Micro SD Card. User can find the needed files by configuring the duration (between **Start** time and **End** time) and clicking on “**Search**”.

A checkbox is shown to allow the deletion of the file if necessary.



The network camera supports 2 ways to play the recorded video files:

*.file click on the file to play the record video file online. There will be a pop-out window, as below, playing the recorded video.



*.mp4: click on the .mp4 file to download.

The .mp4 file is encoded with H.264. The used media player on the host PC has to support the H.264-encoded video file to play the video file.

Note:

There are some recommended media players, as below, that support H.264-encoded video file. Please refer to following webs to download and install.

QuickTime: http://www.apple.com/quicktime/download/

VLC: http://www.videolan.org/vlc/

KMPlayer: http://kmplayer.en.softonic.com/

5.4 Event Settings

The Event Settings page allows the user to customize the Network Camera to perform actions during a period of time, upon the occurrence of certain events in order to have a result.

For example: Capture a snapshot, at anytime, when a motion is detected; and send the snapshot to an email address.

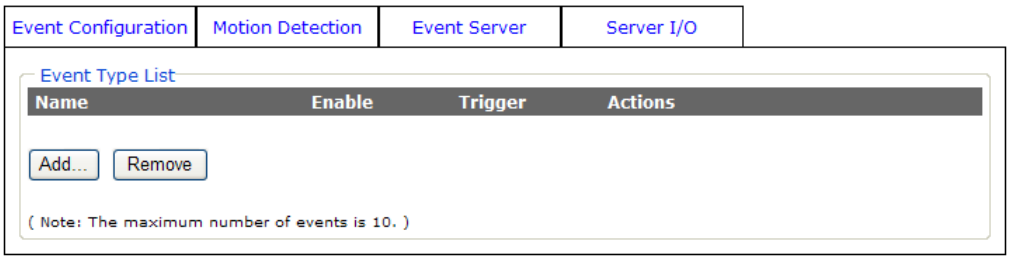
In simple words: Upon some condition, during a time, do something with a result.

The condition will be set by “Trigger by”

The time of doing something will be set by “Respond to Trigger”

Doing something with a result will be set by “When Triggered…”

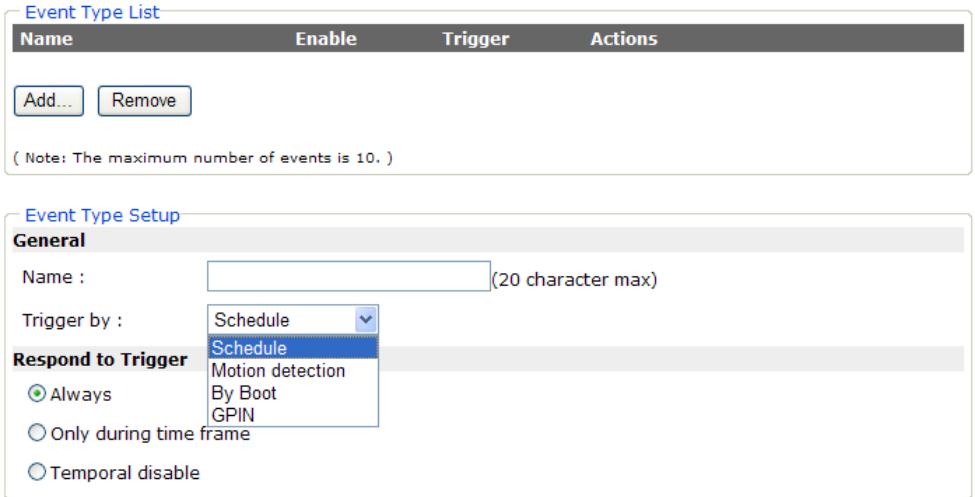
5.4.1 Event Configuration



Event Type List

Add: In order to turn on the capability of setting an Event, go to the Event Configuration page and click on Add to see the available options. ***Note:*** *the maximum number of events are limited to 10 (ten).*

Remove: In order to remove any existing event, click on the name of the Event and click on Remove.



Event Type Setup

Name: Input a name to identify the Event that will perform the action upon some event occurrence.

Trigger by: (Condition)

Schedule: it will perform an action during a time defined by the user.

Motion Detection: it will perform an action upon a motion detected set in some are defined by the user.

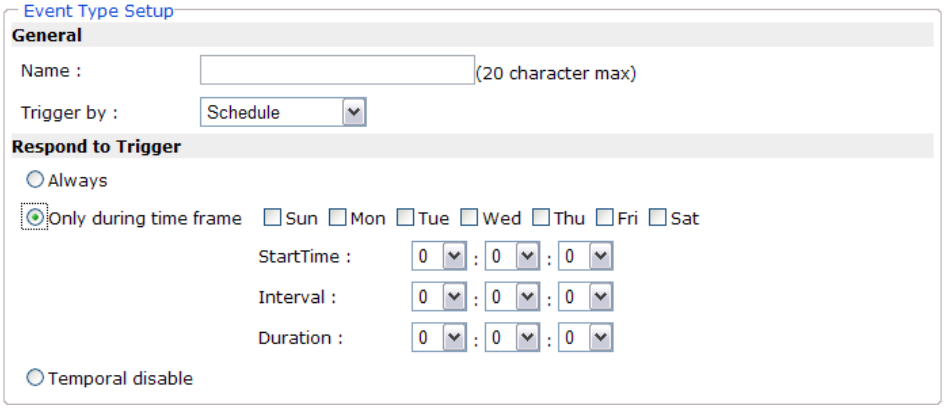
By Boot: it will perform an action when the camera is booted or restarted. This feature is useful to detect reconnections that are not anticipated or expected.

GPIN: it will perform an action when a connected triggering device (at Pin3&4) is activated.

Respond to Trigger (Activated Time)

Always: always keep the Network Camera alert to wait for some condition to happen.

Only during time frame: it will perform the action only for the time frame set. This is different from the Schedule condition, since the Schedule condition sets the time as the main reason to start doing something, while the "time frame" sets the duration of the action.



Check the corresponding days to execute the triggering time.

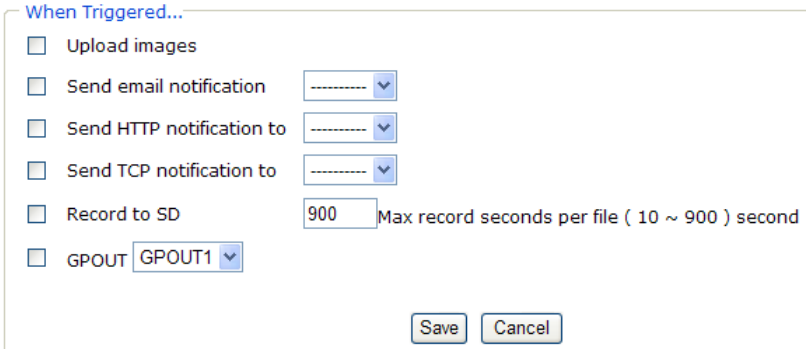
Start Time: indicates that time that the trigger will be start executing

Interval: indicates the interval between each action.

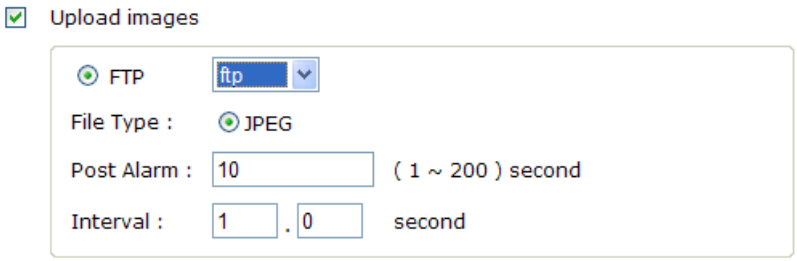
Duration: indicates the duration of the trigger from the Start Time.

Temporal Disable: don't do anything while activated. In other words, even if the condition has happened the Network Camera shall not do anything. This option is useful to pre-set conditions that will probably be used in the future by desire, but that hasn't to be activated now.

When Triggered…(Do some action with a result)



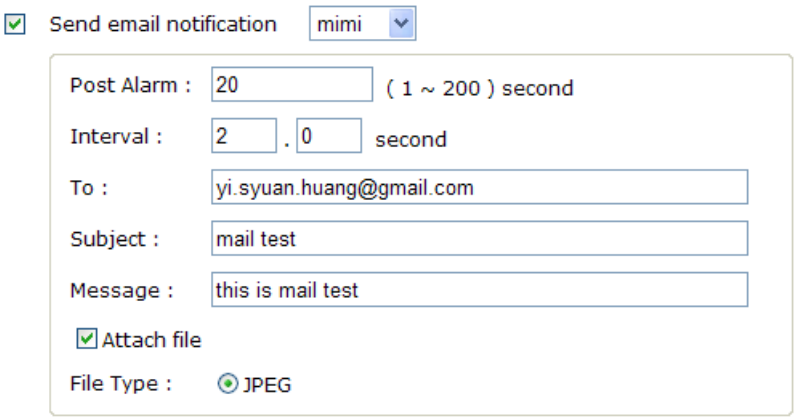
Upload Images: sends the images to an FTP server.



Post Alarm: Set the duration of action after the event

Interval: Set the time between each two notifications.

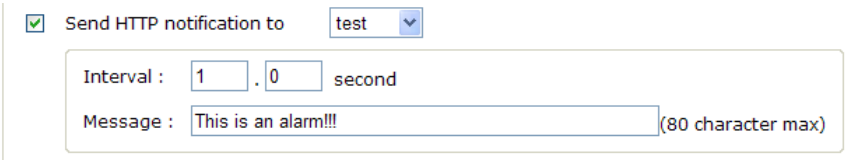
Send Email notification: Send an email message to a predefined email address set in the Network Configuration.



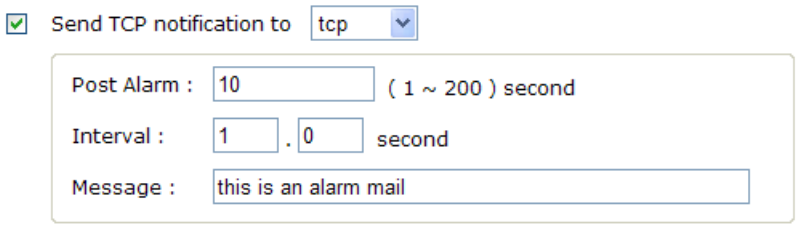
Post Alarm: Set the duration of action after the event

Interval: Set the time between each two notifications.

Sent HTTP notification: Send a text message as a parameter to an HTTP port that should be expecting a text message or a command.



Send TCP notification: Send a text message to an TCP port that should be expecting a text message



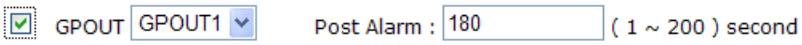
Post Alarm: Set the duration of action after the event

Interval: Set the time between each two notifications.

For configuring the FTP, Email, and TCP settings, refer to the Network Configuration, on Event Server.

Record to SD: Record video image to SD card.

GPOUT: Set to activate a connected device (at Pin1&2) once triggered.



Post Alarm: Set the duration (1 – 200 second) of action after the event

5.4.2 Motion Detection

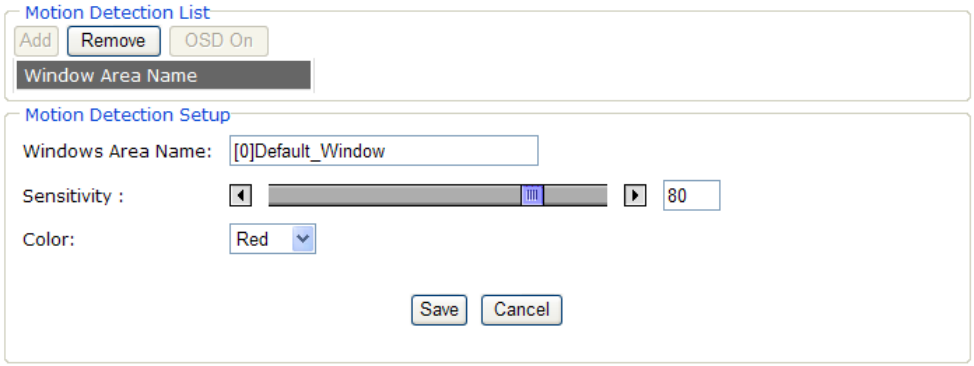
Video motion detection is used to generate an alarm whenever movement occurs (or stops) in the video image.

A total of 3 Include and/or Exclude windows can be configured.

Once configured, the video motion detection windows appear in the list of available triggers, for triggering events.

Note:

1. *Using the motion detection feature may decrease the camera's overall performance*
2. *Don't set Date & Time of OSD (On-Screen Display) included in the detected area.*



Motion Detection List

Add: 3 areas can be set for which they will be identified in 3 colors each, Red, Green or Blue.

Once clicked, according to the color selected, a squared block can be drawn on top of the video displayed using the mouse.

Press the left click of the mouse to start drawing the box, and drag it upon the video to mark the desired area. Once finished, release the left click of the mouse, and the box will be drawn as intended.

Remove: In case any of the area is not required, click on the name of the Area Name from the Motion Detection List, and click on Remove.

OSD On/Off: Select "OSD On" to present in screen that Motion Detection is working**.**

Windows Area Name: Descriptive name of your choice

Sensitivity: values run from 0 to 100; for which the higher the number, the more sensitive is the motion area.

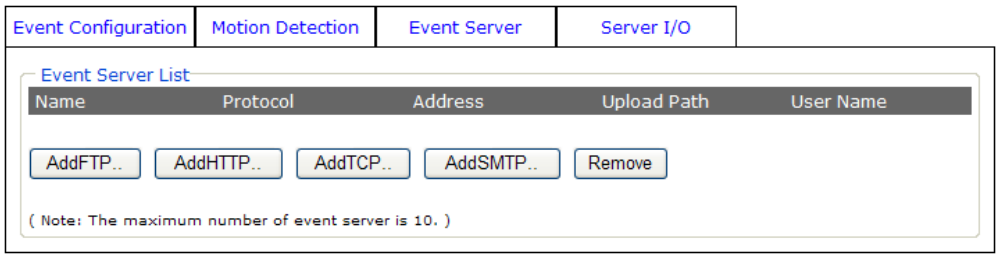
Color: 3 colors can be chosen among the areas set for the motion detection; Red, Blue or Yellow.

Save: Once the process has been completed click on "Save" to make the changes permanent.

Cancel: in case for any reason, the selection was not properly configured, click on Reset to clear up the values for each feature.

5.4.3 Event Server

Event Servers are used to receive uploaded image files and/or notification messages. To set up Event Server connections in your camera, go to Setup > Event Configuration > Event Servers and enter the required information for the required server type.



Add FTP: adds an FTP to be used as a recipient for the images

AddHTTP: adds an HTTP server to receive text messages.

AddTCP: adds a TCP port to received text messages.

AddSMTP: adds an Email server/address to receive email messages

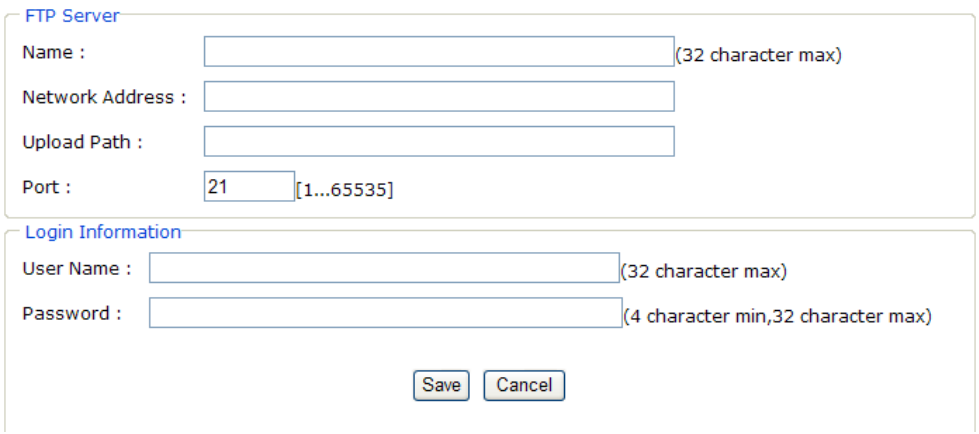
Remove: to remove any existing Event Server, select a Name from the Event Server List and click on

Remove.

Upon clicking on any button to add FTP, HTTP, TCP or SMTP server a box will show up for filling the required information.

FTP Server

Receives uploaded images



Name: Descriptive name of your choice

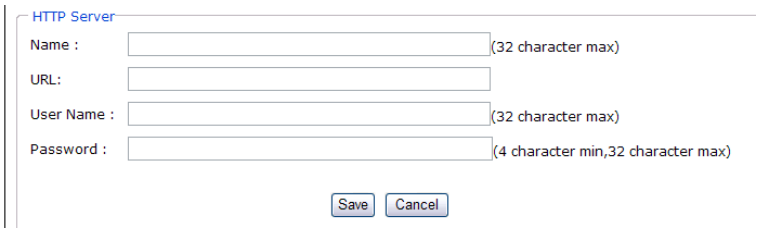
Network address (IP address or host name)

User Name and Password: Enter the Username and Password for allowing the upload of the images.

Note: *Consult your Network Administrator for the correct Username and Password applied to the folder. Make sure that the Username applied in this folder does have Write and Delete permissions to it. In case Write and Delete permissions are not applicable, the intended files to be stored will not take into effect*

HTTP Server

Receives notification messages



Name: Descriptive name of your choice

URL: URL (IP address or host name)

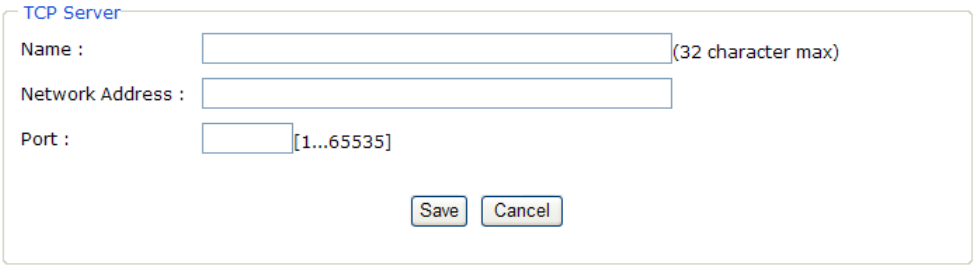
Username and Password: Enter the Username and Password for allowing the reception of messages.

Note: *Consult your Network Administrator for the correct Username and Password applied to the HTTP and Proxy Server. Make sure that the Username applied in the HTTP and Proxy does have Write and Delete permissions to it. In case Write and Delete permissions are not applicable, the intended messages to be delivered will not take into*

effect

TCP Server

Receives notification messages



Name: Descriptive name of your choice

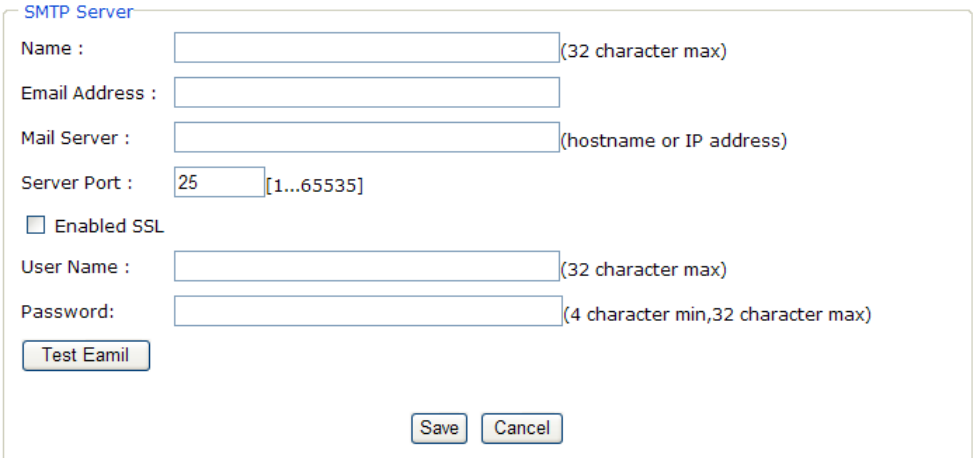
Network Address: IP address or host name

Port number: Enter the port number of the TCP service that is expecting to receive the message.

Note: *Consult your Network Administrator for the availability of the TCP service and Port number to be used.*

SMTP Server

To send email messages



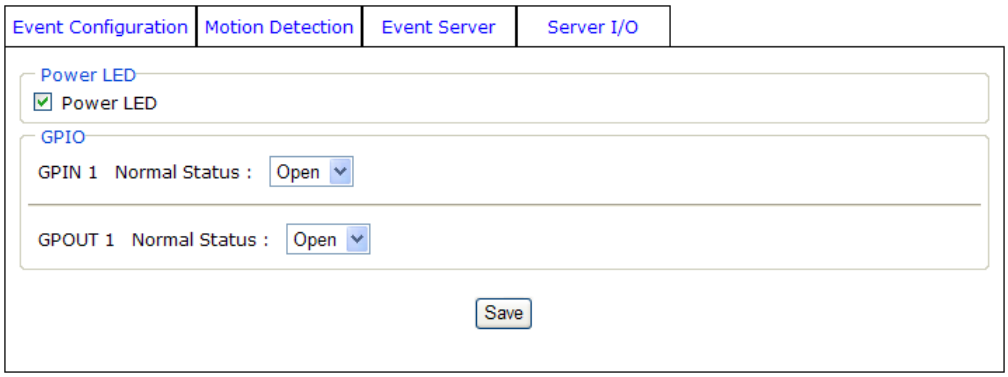
Name: Descriptive name of your choice

Email Address: enter sender's (the network camera) email address

Mail Server: URL of mail server (IP address or host name)

Username and Password: Enter the Username and Password for authentication if necessary.

5.4.4 Server I/O



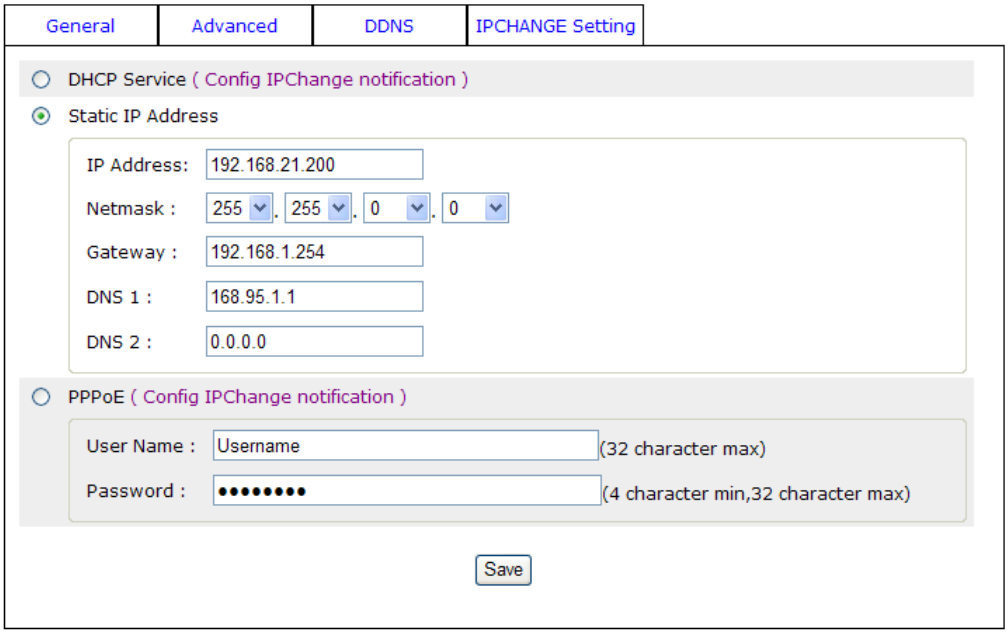
Power LED: Check the box if the Power LED is required to be off while the Network Camera is on.

GPIO: is used to configure normal circuit status for receiving and triggering Alarms.

GPIN 1 Normal Status: sets “Open” or “Close” for the Normal Status of GPIN circuit

GPOUT 1 Normal Status: sets “Open” or “Close” for the Normal Status of GPOUT circuit

5.5 Network Settings


General
Advanced
DDNS
IPCHANGE Setting
DHCP Service (Config IPChange notification)
Static IP Address
IP Address: 192.168.21.200
Netmask : 255 . 255 . 0 . 0
Gateway : 192.168.1.254
DNS 1 : 168.95.1.1
DNS 2 : 0.0.0.0
PPPoE (Config IPChange notification)
User Name : Username (32 character max)
Password : •••••••• (4 character min,32 character max)
Save

The Network Settings page allows the user to change and add more sophisticated configurations based on the network infrastructure where the Network Camera is installed.

As for the IP Discovery Tool is useful for initial boot up and straight network configuration, the Network Settings page offers a flexible way to fully utilize the network capabilities.

General: Basic IP configuration settings.

Advanced: Page for network settings that include Time Server, Hostname and Port for services.

DDNS: Service for accessing the Network Camera through domain names rather than IP addresses.

PPPoE: Configuration page for connecting directly to ADSL internet services.

Event Server: Sets up the servers utilized in the Event feature page, such as FTP, HTTP, SMTP and TCP.

Note: *Consult your Network Administrator for the availability of the services and the values for the configuration to be used.*

5.5.1 General

DHCP: Obtain IP address via DHCP

Dynamic Host Configuration Protocol (DHCP) is a protocol that lets network administrators centrally manage and automate the assignment of IP addresses on a network. Although a DHCP server is mostly used to set an IP address dynamically, it is also possible to use it to set a static, known IP address for a particular MAC address.

Advise to set IPCHANGE for dynamic IP mode while DHCP service is activated.

Static IP Address

IP address: Specify a unique IP address for your network camera.

Subnet mask: Specify the mask for the subnet the network camera.

Gateway: Specify the IP address for the Gateway

DNS1: Specify the IP address for the first group of DNS

DNS2: Specify the IP address for the second group of DNS

PPPoE:

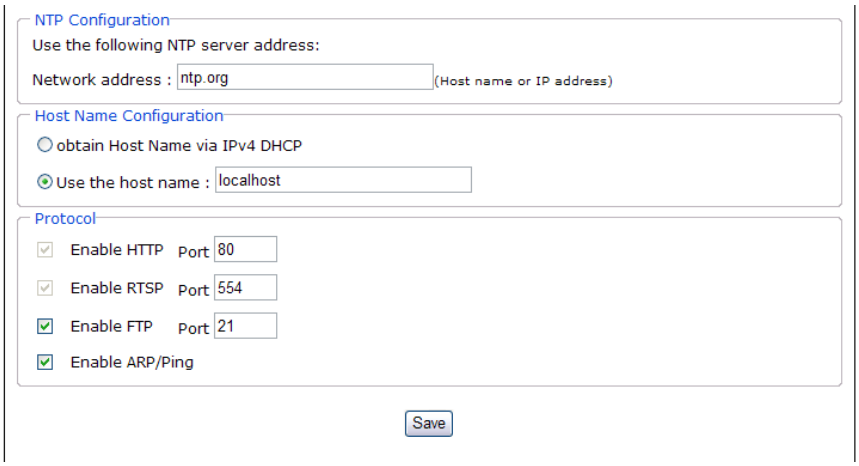
The PPPoE feature enables the user to connect the Network Camera directly to the ADSL Modem having direct access to Internet. Click on the PPPoE Enable box to activate the feature, and enter the Username and respective Password.

The Username and Password, as well as the internet service that goes with the ADSL Modem are provided by an Internet Service Provider (ISP) such as your local telephone company.

Contact your ISP for more information on how to acquire such service.

Advise to set IPCHANGE for dynamic IP mode while PPPoE is enabled.

5.5.2 Advanced



NTP Configuration

Obtain NTP server address via DHCP - check this radio button to automatically look up and use the NTP server settings as provided by DHCP. Click the View button to see the current settings.

Use the following NTP server address - to create manual settings, check this radio button and enter the host name or IP address of the NTP server.

Warning

For users using PPPoE as their network access, any change made to the "Network address" of the "NTP Configuration may cause the screen to remain still for a while, because your local ISP (Internet Service Provider) is assigning new IP address and new values for the HTTP, RTSP and FTP ports, whenever a change is made to NTP through PPPoE.

Host Name Configuration

The network cameras can be accessed using a host name, instead of an IP address.

Obtain Host Name server address via ipV4 DHCP - automatically use the DNS server settings provided by the DHCP server. Click the View button to see the current settings.

Use the Host Name - enter the desired DNS server by specifying the following:

Domain name - enter the domain(s). Multiple domains can be separated by semicolons (;). The host name is always the first part of a Fully Qualified Domain Name, for example, myserver is the host name in the Fully Qualified Domain Name myserver.mycompany.com where mycompany.com is the Domain name.

HTTP

The default HTTP port number 80 can be changed according to the user's need. This is useful for simple security port mapping.

RTSP

The RTSP protocol allows a connecting client to start an H.264/MJPEG stream. Check the box to enable the server and enter the RTSP port number to use. The default setting is 554. Note that H.264/MJPEG video streams will not be available if this service is not enabled.

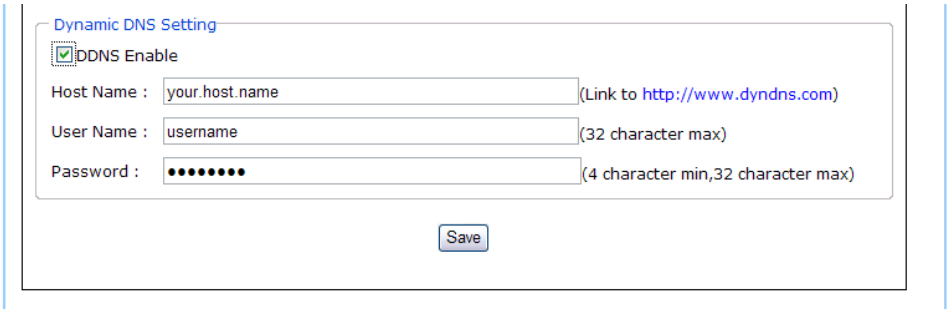
FTP

The FTP server running in the network cameras enables the upload of new firmware, and user applications. Check the box to enable the service.

Arp / Ping

Enabling Arp / Ping will offer an additional tool to the user in order to detect the status of the Network Camera. For related commands to ARP/Ping, refer to your Network Administrator.

5.5.3 DDNS



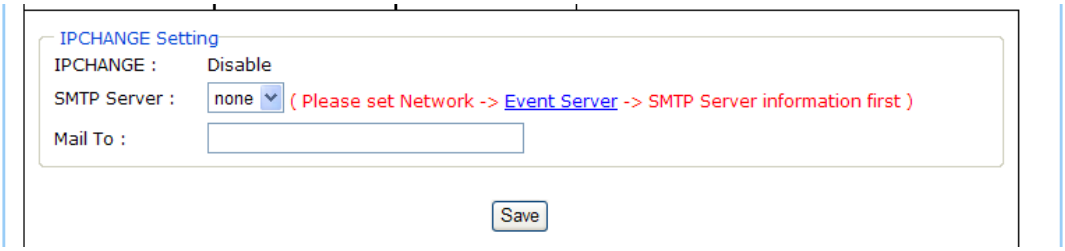
The DDNS (Dynamic Domain Name Service) feature allows users to access the Network Camera without the need of remembering the IP address, but rather using a name.
For example: http://www.mycamera.com

To be able to use the DDNS feature, a domain name must be registered first in a domain name service from a 3rd party service provider, such as DynDNS (www.dyndns.org).
The DDNS feature only forwards the information between the Host Name server and the Network Camera, therefore the Username and Password must be obtained from the 3rd party service provider before using the feature.

Note: *Refer to your Domain Name Service Provider for more information on setting up a domain name. Some Domain Name Service providers charge a fee for the registration, while some offer the service as free of charge. It will be in the user's decision which service to acquire.*
In order to use the DDNS feature, it is assumed that the Network Camera already has direct access to Internet.
For more information on how to allow the Network Camera to access the Internet, consult with your Network

Administrator and you can also refer to the Port Forwarding Section in this manual for a basic guide line and a better understanding of the topic in matter.

5.5.4 IPCHANGE Settings



This setting triggers an email sending to notify the latest IP address when the IP address of this network camera is changed. Please configure SMTP Server information (Network -> Event Server) first.

IPCHANGE: Disable or Enabled

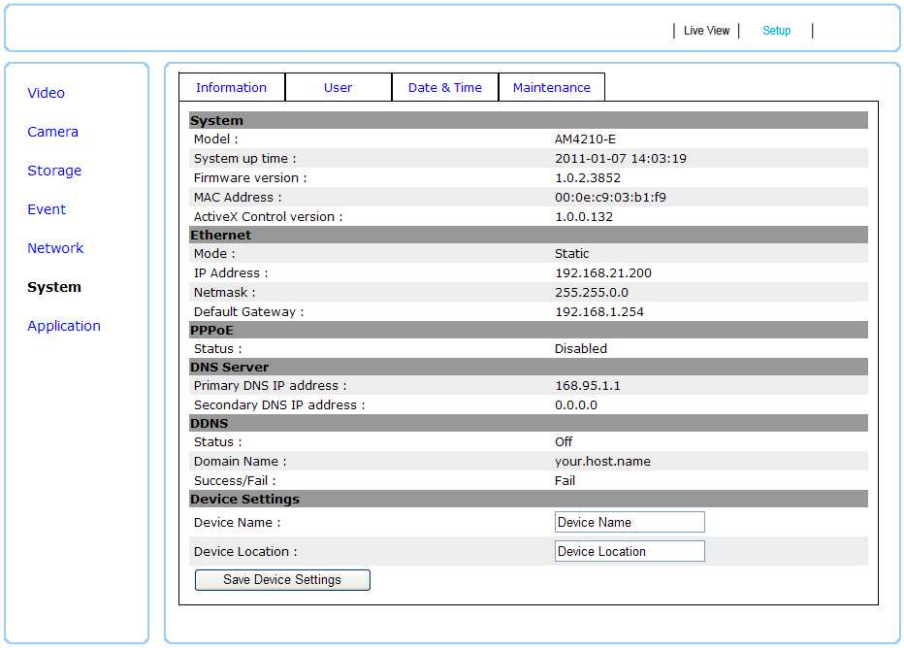
SMTP Server: Select one on the list of configured Email servers

Mail To: Set the destination (e.g. 0001@abc.com) which the alerting email is sent to.

Click on "**Save**" to apply the change.

5.6 System Settings

5.6.1 Information

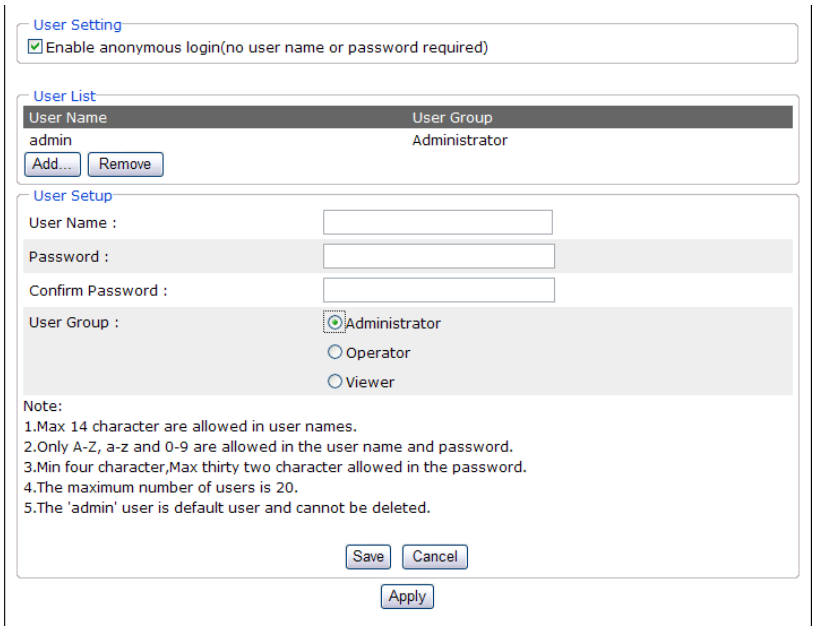


The System Settings page displays information about the current status of the Network Camera.

Such information is useful to have references when direct information is required without going through the

different pages of configuration of the Network Camera.

5.6.2 User



The user configuration page allows the Network Camera to have multiple users and profiles to access the Network Camera.

Enable anonymous login:

To allow the access to the Network Camera without restrictions, select the box of Enable anonymous login and click on “Save” to make the changes permanent.

Such change will allow anyone to access the Network Camera without a username or password.

Note: *it is in the user’s discretion whether or not to allow authorized and unauthorized to access the Network Camera.*

Adding a user

In order to add a new user, click on the “Add “button and fill the information which is required.

After filling the information, click on “Save” to make changes permanent to the device.

Administrator: Permission to view and change the configuration of the Network Camera.

Operator: Has permission to change certain configuration of the camera.

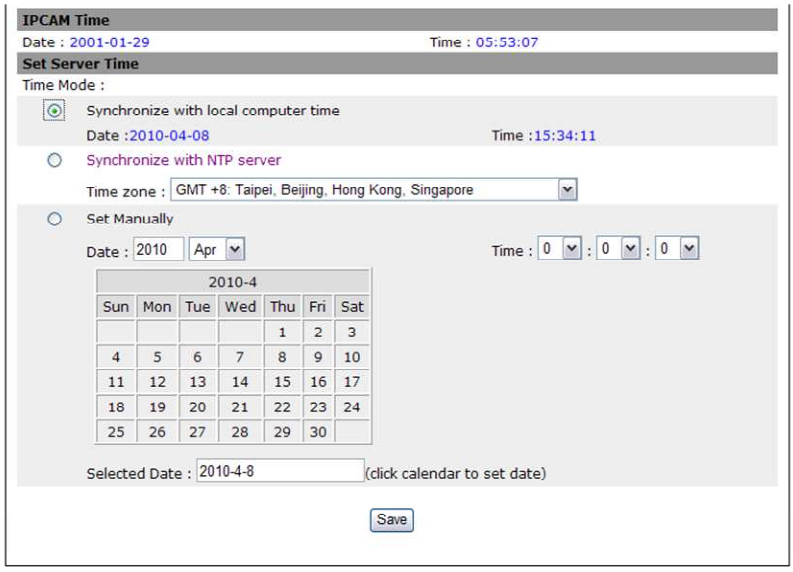
Viewer: Has only permission to view the Network Camera.

Note: *follow the instructions displayed on the User’s page while selecting of a Username and Password.*

Deleting a user

To delete user, click on a Name from the Users list and click on “Remove”, then click on “Save” to make the changes permanent.

5.6.3 Date & Time


IPCAM Time
Date : 2001-01-29
Time : 05:53:07
Set Server Time
Time Mode :
Synchronize with local computer time
Date :2010-04-08
Time :15:34:11
Synchronize with NTP server
Time zone : GMT +8: Taipei, Beijing, Hong Kong, Singapore
Set Manually
Date : 2010 Apr
Time : 0 : 0 : 0
2010-4
Sun Mon Tue Wed Thu Fri Sat
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30
Selected Date : 2010-4-8
(click calendar to set date)
Save

Displays the date and time (24 hours clock) of the Network Camera.

Set Server Time

Select the Automatically adjust for **daylight saving** time changes if necessary.

From the **Time Mode** section, select the preferred method to use for setting the time:

Synchronize with computer time - sets the time from the clock on your computer.

Synchronize with NTP Server - the camera will obtain the time from an NTP server every 60 minutes.

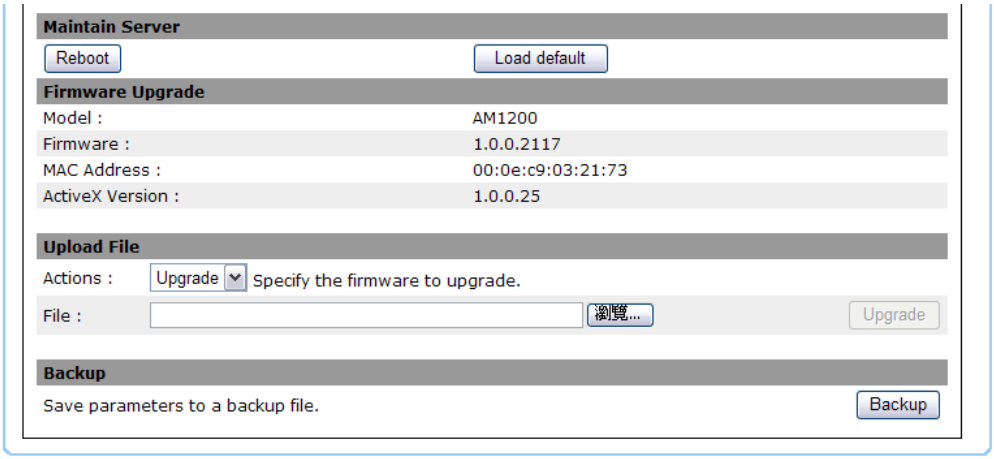
Set manually - this option allows you to manually set the time and date.

Note: *If using a host name for the NTP server, a DNS server must be configured under Network Settings.*

Click on **“Save”** to make the changes permanent.

In case there was error during the selection, click on **“Reset”** and restart the process.

5.6.4 Server Maintenance



The Server Maintenance page allows the user to make changes in the Network Camera, such as:

Reboot: restarts the Network Camera

Load Default: sets the Network Camera back to the default parameters from factory.

Upload File: Upgrades the Network Camera to a new released firmware. Look up for the file and select it. Click on “Upgrade” to proceed with the upgrading of the firmware.

Restore: Look up for the file that restores a previous configuration of the Network Camera. Click on “Upload“ to begin the process.

Backup: click on “Backup” to save the current parameters of the Network Camera to a file.

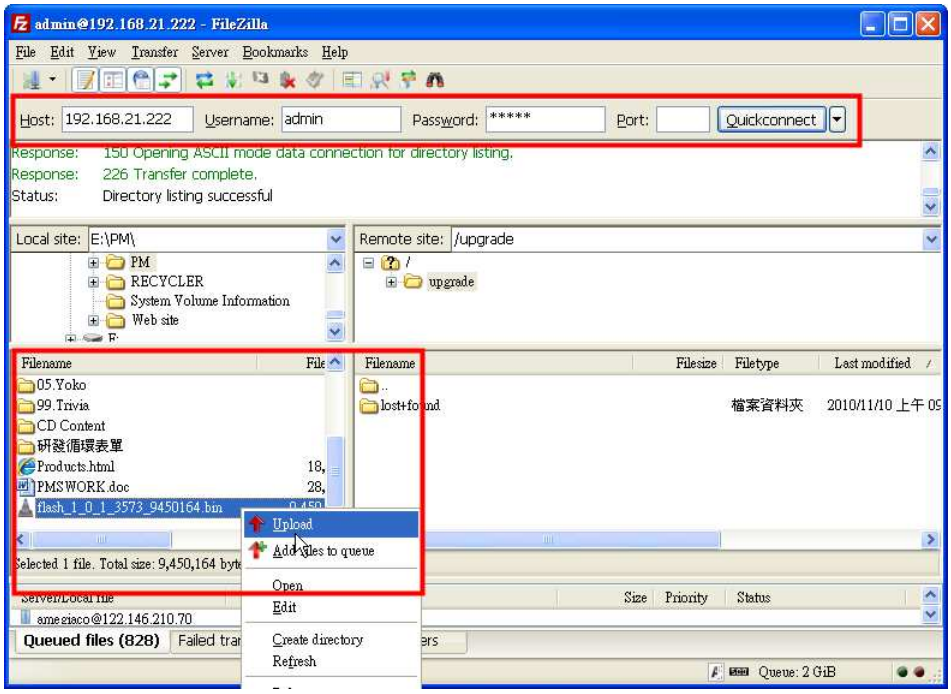
Note:

1. ***Please do not restore previous configuration file into camera which has been upgraded with new firmware version. It may lead to malfunction.***
2. *Before making any changes to the system of the Network Camera, make sure it is what is required while all alternatives have been considered and executed.*

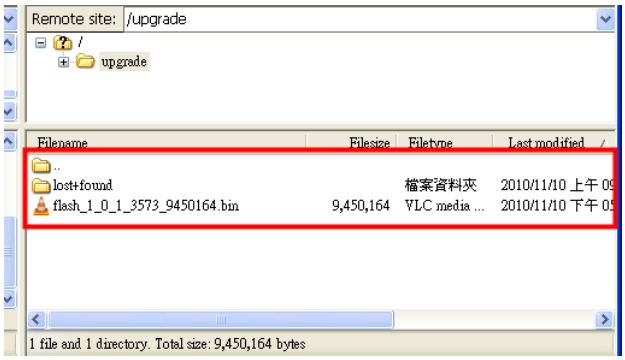
Besides upgrade via HTTP, the network camera also supports upgrade via FTP and Micro SD card.

Upgrade via FTP

The camera acts like FTP server. User opens FTP client software on the host PC to connect the camera. Then, select the firmware to upload.



Once new firmware is uploaded onto to the camera, camera will process upgrade automatically.

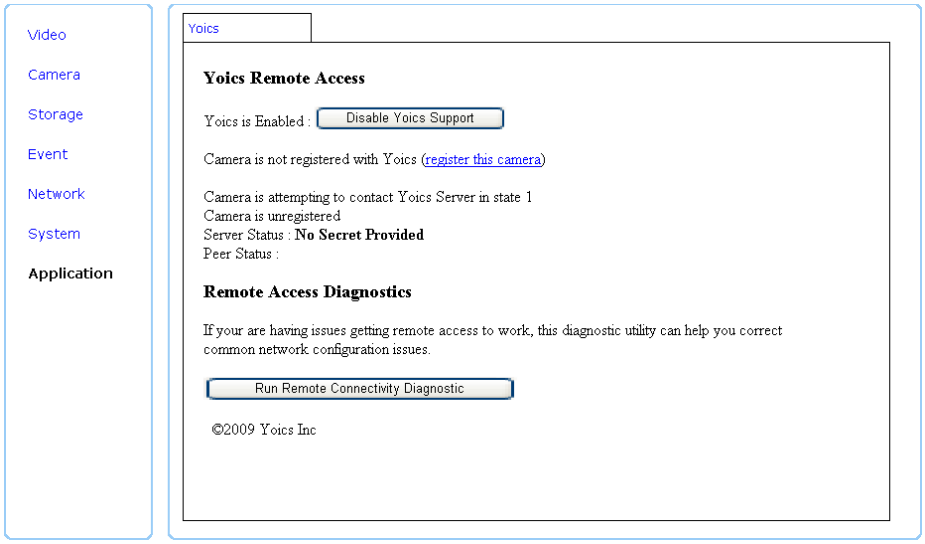

Remote site: /upgrade
upgrade
Filename Filesize Filetype Last modified
lost+found 檔案資料夾
flash_1_0_1_3573_9450164.bin 9,450,164 VLC media ...
1 file and 1 directory. Total size: 9,450,164 bytes

Upgrade via Micro SD card

1. User need to save new firmware in Micro SD card and unplug the power connector from the camera.
2. Insert Micro SD card into slot and power on the camera again.
3. Camera will boot up and process upgrade automatically.

5.7 Application (optional)

5.7.1 Yoics Setup


Video
Camera
Storage
Event
Network
System
Application
Yoics
Yoics Remote Access
Yoics is Enabled :
Disable Yoics Support
Camera is not registered with Yoics (register this camera)
Camera is attempting to contact Yoics Server in state 1
Camera is unregistered
Server Status : No Secret Provided
Peer Status :
Remote Access Diagnostics
If your are having issues getting remote access to work, this diagnostic utility can help you correct common network configuration issues.
Run Remote Connectivity Diagnostic
©2009 Yoics Inc

5.7.1.1 Register the camera

Have a Yoics account already

Please go to www.yoics.net to sign in for your account.

Create a new Yoics account

You can view it locally by typing the IP address on your browser. The IP-Discovery tool (IPDIS) can help you find the IP address of your camera.

Enter [Setup] → [Application] → [Yoics] page (Fig1),
then click (register this camera).
Follow the Yoics website instructions [NEW REGISTERATION] (Fig2) to fill in and get a new account.

Follow Instructions on Webpage
The New Product Detected Window will pop up (Fig3), please follow the webpage instructions to finish adding the new camera.

Note: Please select DHCP to set up network for the camera. “PPPoE” and “static ip” will lead the failure of Yoics registration.

Fig1.Register this camera

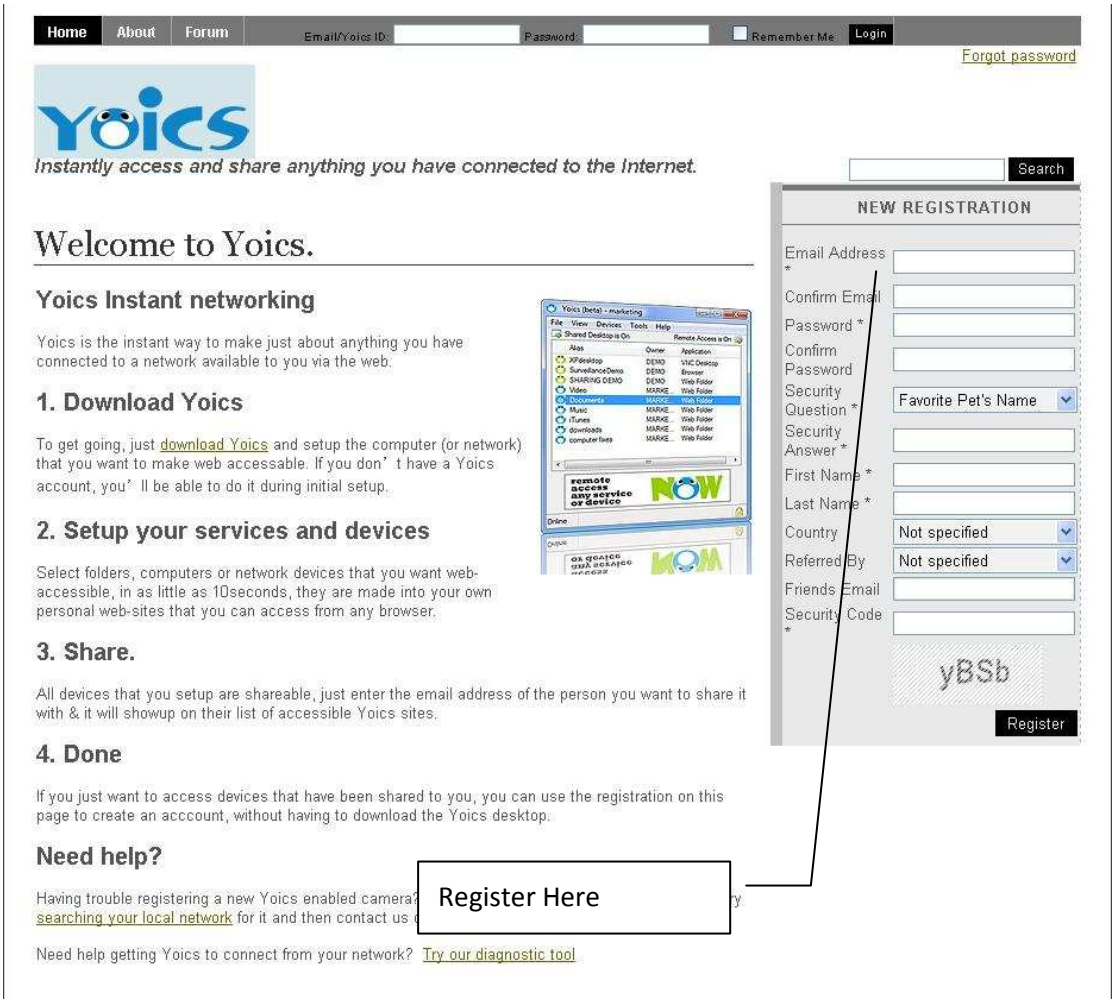

Home
About
Forum
Email/Yoics ID:
Password:
Remember Me
Login
Forgot password
Instantly access and share anything you have connected to the Internet.
Search
Welcome to Yoics.
Yoics Instant networking
Yoics is the instant way to make just about anything you have connected to a network available to you via the web.
1. Download Yoics
To get going, just download Yoics and setup the computer (or network) that you want to make web accessable. If you don't have a Yoics account, you'll be able to do it during initial setup.
2. Setup your services and devices
Select folders, computers or network devices that you want web-accessible, in as little as 10seconds, they are made into your own personal web-sites that you can access from any browser.
3. Share.
All devices that you setup are shareable, just enter the email address of the person you want to share it with & it will showup on their list of accessible Yoics sites.
4. Done
If you just want to access devices that have been shared to you, you can use the registration on this page to create an acccount, without having to download the Yoics desktop.
Need help?
Having trouble registering a new Yoics enabled camera?
searching your local network for it and then contact us
Need help getting Yoics to connect from your network? Try our diagnostic tool
NEW REGISTRATION
Email Address *
Confirm Email
Password *
Confirm Password
Security Question *
Favorite Pet's Name
Security Answer *
First Name *
Last Name *
Country
Not specified
Referred By
Not specified
Friends Email
Security Code *
yBSb
Register
Register Here

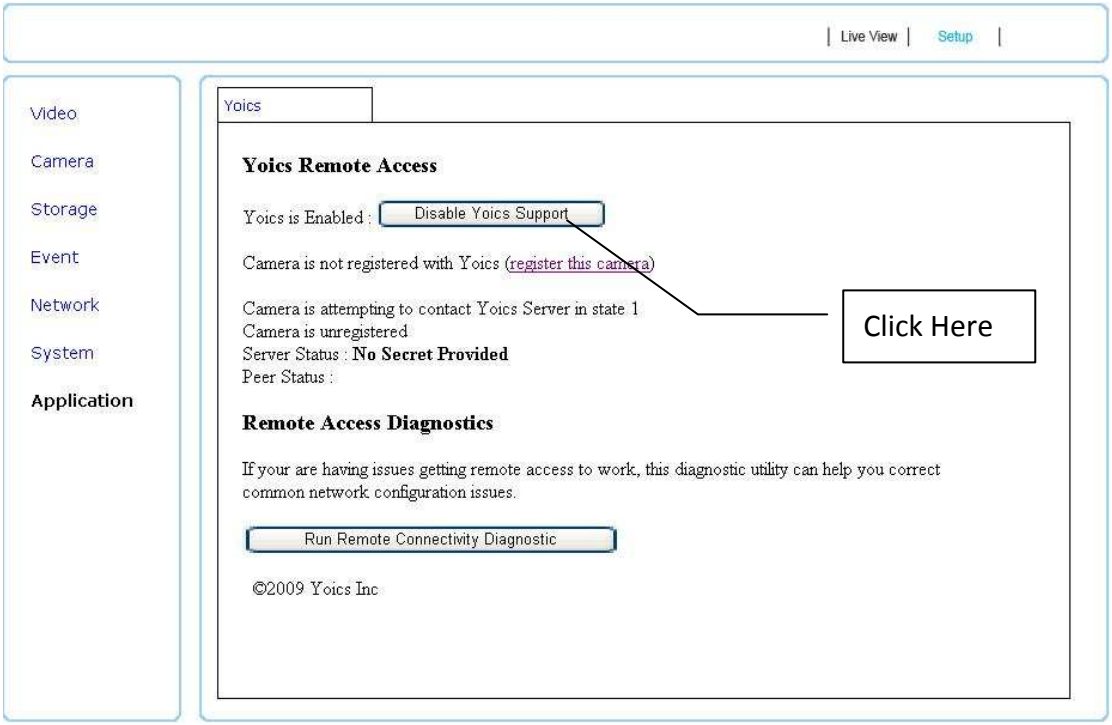
Fig2. New Registration

We found a new product?
Remind me later
We have detected a new Yoics Inc product
on your local network. To register your new product, press the Continue
button below and follow the instructions.
Thank you for using our services
Yoics
Continue

Fig3.Detect new product window

5.7.1.2 Unregister Camera

Click on "**Disable Yoics Support**"



Login into Yoics Website

Please go to www.yoics.net to sign in to your account.

Delete Service from Camera Settings.

Choose [MY STUFF]-> Settings of Camera Name.(Fig4)

Click [Advanced Service Settings]->[Delete Service].(Fig5)

Fig4.Camera Settings

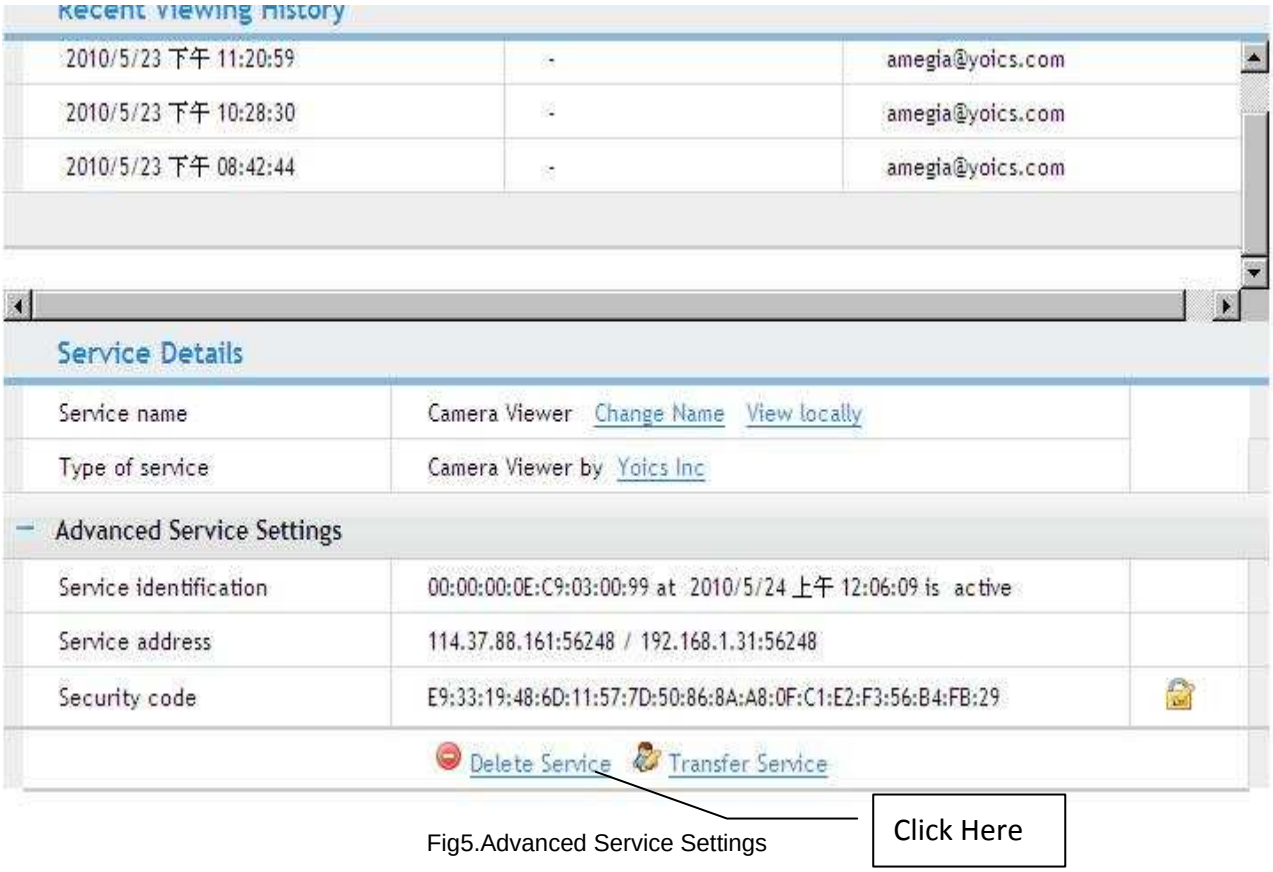

Recent Viewing History
2010/5/23 下午 11:20:59 - amegia@yoics.com
2010/5/23 下午 10:28:30 - amegia@yoics.com
2010/5/23 下午 08:42:44 - amegia@yoics.com
Service Details
Service name Camera Viewer Change Name View locally
Type of service Camera Viewer by Yoics Inc
Advanced Service Settings
Service identification 00:00:00:0E:C9:03:00:99 at 2010/5/24 上午 12:06:09 is active
Service address 114.37.88.161:56248 / 192.168.1.31:56248
Security code E9:33:19:48:6D:11:57:7D:50:86:8A:A8:0F:C1:E2:F3:56:B4:FB:29
Delete Service
Transfer Service
Click Here

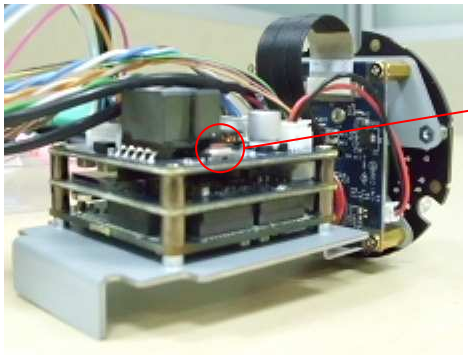
Fig5.Advanced Service Settings

6 Troubleshooting

6.1 Factory Default

To execute the Factory Default, there are two options:

1. Remove the cover and then press the factory default button on the top layer of the module boards.



2. Use two pin needles to insert into the “Default” and one of the “GND” pin (which are the Pin 5 and Pin 6).

The device is back to factory default. All settings will be erased from the device, and the assigned IP will be back to 192.168.1.200 and Subnet mask to 255.255.0.0.

The device is back to factory default. All settings will be erased from the device, and the assigned IP will be back to 192.168.1.200 and Subnet mask to 255.255.0.0.

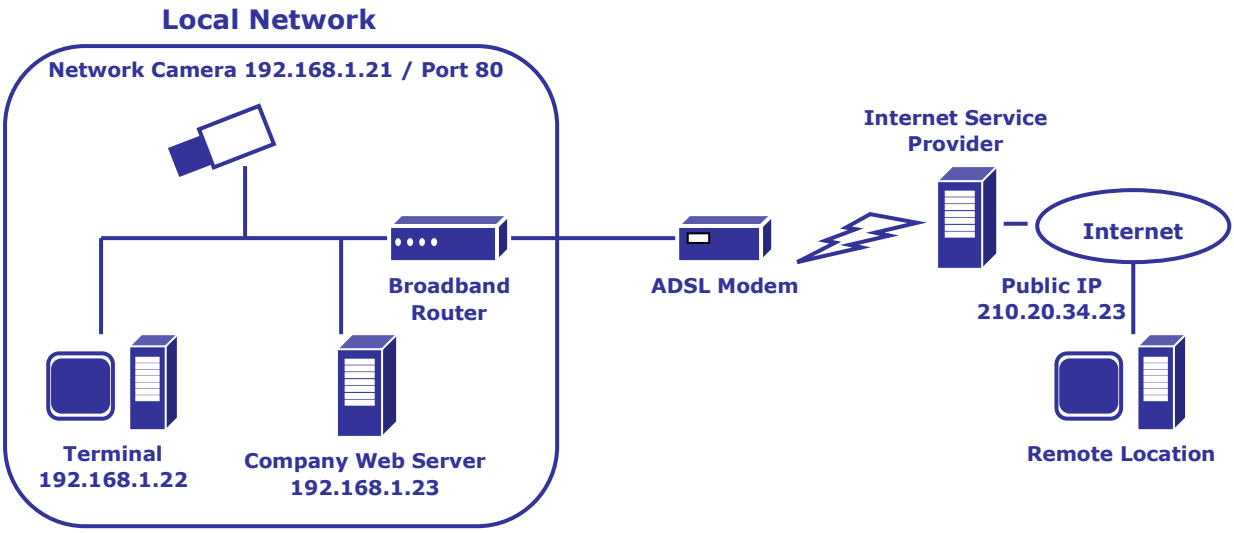
6.2 Viewing the camera from a remote location

The below guideline shows you how to setup the Network Camera for viewing it from a remote location.

The network infrastructure demonstration is just for your reference only. Each network infrastructure may vary upon the needs of the organization.

Note: Consult your Network Administrator for a better understanding of networking concepts and related topics.

6.2.1 Standard connection



In this case what we have here is:

Public IP Address 210.20.34.23, assigned by the Internet Service Provider (ISP)

Network Camera, with a local IP of 192.168.1.22

Broadband router

Since we are sharing only one single Internet connection through our Local Network, the Port Forwarding configuration in our Broadband Router for the camera will be as follows:

Private IP	Private Port	Type	Public Port
192.168.1.22	80	● TCP ○ UDP	80
192.168.1.22	554	● TCP ○ UDP	554

Notice that the Port 80 is the default port for any Web-Server, but this also can be changed. Since Port 80 is the default, when we type our IP address at the Address bar, there won't be any need to type the port number.

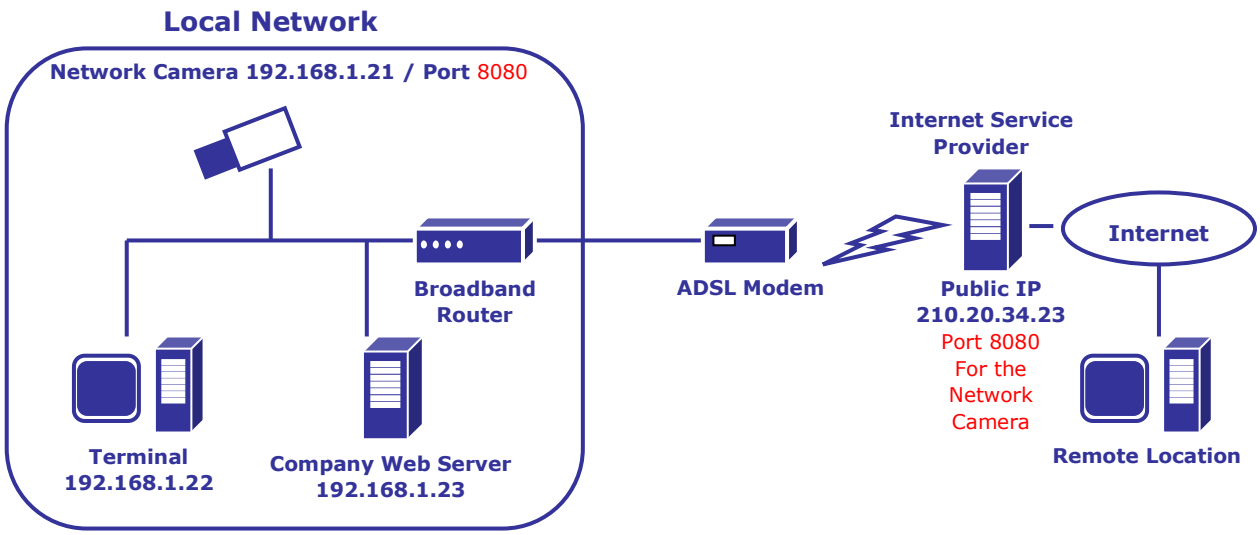
The default port for streaming an H.264 video is port 554, being the same as the port 80, it can also be changed.

Once the broadband router's configurations are set, we can open the Internet Explorer and type in the Address bar the Public IP address.

Once the broadband router's configurations are set, we can open the Internet Explorer and type in the address bar the Public IP address.

http://210.20.34.23/

6.2.2 Assigning Ports Manually



In this case what we have here is:

Public IP Address 210.20.34.23, assigned by the Internet Service Provider (ISP), but we will be using Port 9999 for accessing the camera from the Internet.

The Network Camera, with a local IP of 192.168.1.22, using port 8080 to get access to the camera through the Local Network.

Broadband router

Since we are sharing only one single Internet connection through our Local Network, the Port Forwarding configuration in our Broadband Router for the camera will be as follows:

Private IP	Private Port	Type	Public Port
192.168.1.22	8080	● TCP ○ UDP	8080
192.168.1.22	554	● TCP ○ UDP	554

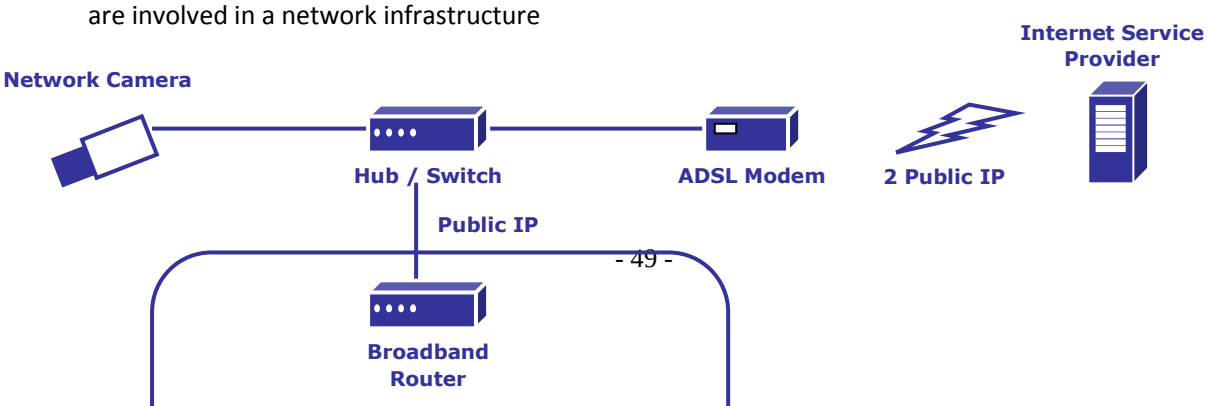
In this case we are using Port 8080 for the Network Camera at 192.168.1.22, and using Port 8080 for the Internet access at 210.20.34.23.

When we are in a remote location, in order to access our camera through Internet, we have to specify the Public Port when typing the Public IP Address as the figure below

http://210.20.34.23:8080/

6.2.3 Using two ore more public IPs

The following figure is just an illustration on how the camera can be connected when 2 or more Public IPs are involved in a network infrastructure



7 Frequently Asked Questions

Symptoms, Possible Causes, and Remedial Action

Problems setting the IP address

The camera is located on a different subnet

If the IP address intended for the camera and the IP address of your computer are located on different subnets, you will not be able to set the IP address. Contact your network administrator to obtain an appropriate IP address.

The IP address is being used by another device

Disconnect the camera from the network. Run the Ping command. (In a Command/DOS window, type ping and the IP address of the unit).

If you receive: Reply from <IP address>: bytes = 32; time = 10 ms..... - this means that the IP address may already be in use by another device on your network. You must obtain a new IP address and reinstall the unit.

If you see: Request timed out - this means that the IP address is available for use with your camera. In this case, check all cabling and reinstall the unit.

Possible IP address conflict with another device on the same subnet

The static IP address in the camera is used before the DHCP server sets a dynamic address. This means that if the same default static IP address is also used by another device, there may be problems accessing the camera. To avoid this, set the static IP address
to 0.0.0.0.

The camera cannot be accessed from a browser

The IP address has been changed by DHCP

If the camera and client are on the same network, run the IP Discovery Utility to locate the camera.

Identify the camera using its model or serial number

Alternatively:

1) Move the camera to an isolated network or to one with no DHCP or BOOTP server. Set the IP address again, using the IP Discovery Utility (see the Installation Guide) or the ARP/Ping commands.

2) Access the unit and disable DHCP in the TCP/IP settings. Return the unit to the main network. The unit now has a fixed IP address that will not change.

3) As an alternative to 2), if dynamic IP address via DHCP or BOOTP is required, select the required service and then configure IP address change notification from the network settings.

Return the unit to the main network. The unit now has a dynamic IP address, but will notify you if the address changes.

Other networking problems

Test the network cable by connecting it to another network device, then Ping that device from your workstation. See instructions above.

Camera is accessible locally, but not externally

Broadband router configuration

To configure your broadband router to allow incoming data traffic to the camera, enable the NAT port forwarding feature which will configures the router to allow access to the camera.

Firewall protection

Check the Internet firewall with your system administrator.

Default routers required

Check if you need to configure the default router settings.

Problems with the H.264/MJPEG format

No H.264/MJPEG displayed in the client

Check with your network administrator to see if there is a firewall preventing viewing.

Poor rendering of H.264/MPEG-4 images

Color depth set incorrectly on clients. Set to 16-bit or 32-bit color.

Ensure that your graphics card is using the latest device driver. The latest drivers can usually be downloaded from the manufacturer's web site.

Color saturation is different in H.264 and Motion JPEG

Modify the settings for your graphics adapter. Please see the adapter's documentation for more information.

Lower frame rate than expected

Reduce number of applications running on the client computer.

Limit the number of simultaneous viewers.

Check with the system administrator that there is enough bandwidth available. See also the online help.

Lower the image resolution.

No images displayed on web page

Installation of additional ActiveX component restricted

Configure your Internet Explorer to allow the installation of ActiveX by lowering temporally the Internet Explorer security settings.

Video/Image problems, general

Image too dark or too light

Check the video image settings.

Missing images in uploads

This can occur when trying to use a larger image buffer than is actually available. Try lowering the frame rate or the upload period.

Slow image update

Configuring pre-buffers, motion detection, high-resolution images, or high frame rates, will affect the performance of the camera.

Poor performance

Poor performance may be caused by heavy network traffic, multiple users accessing the unit, low performance clients, use of features such as Motion Detection, Event handling.

Poor quality snapshot images

Screen incorrectly configured on your workstation

In Display Properties, configure your screen to show at least 65000 colors, that is, at least 16-bit. Using only 16 or 256 colors will produce dithering artifacts in the image.

Audio volume too low/high

Volume settings incorrect

The volume of the microphone is either too high or too low. Change the volume for the microphone in the toolbar on the Live View page.

Poor audio quality

CPU overloaded

Reduce the number of listeners and viewers and decrease the image resolution and compression.

Unsynchronized audio and video

It is recommended that the camera's time setting is synchronized with an NTP Server. This is enabled under System Options > Date & Time.

Distorted audio

Select Microphone for the internal microphone or for a connected external microphone.

Select Line for a connected line in source.

8 Technical Specifications

MAIN SPECIFICATIONS, PERFORMANCE AND CAPABILITIES		
Lens Type		Board Lens, Focal Length 4.0mm, F1.8
Image Device		2 Megapixels 1/3" CMOS Sensor
Minimum Illumination		1 Lux (IR Off) / 0 Lux (IR On)
Video Compression		H.264 / Motion JPEG
Video Resolution		UXGA: 1600 x 1200, HD-720P: 1280 x 720, VGA: 640 x 480 QVGA: 320 x 240, QQVGA: 160x120
Frame Rate		15 FPS @ UXGA, 30 FPS @ HD-720P / VGA / QVGA / QQVGA
Video Streaming		Multiple configurable streams (up to 8) Bitrate: 64K - 4M bits/sec (VBR/CBR quality control), RTSP URI
Image Adjustment		Brightness, Saturation, Hue, Contrast, Exposure control, White balance, Rotation, Mirror
Day & Night		ICR: Auto / Manual IR LED: radiant distance up to 20 meters
Event System	**Trigger**	Schedule, Motion detection, By boot, GPIN
	Action	Snapshot image upload via FTP, Save Video Clips to Micro-SD card, Notification via email and TCP, GPOUT
Audio Compression		AAC-LC
Terminal Block Pins		Common, Digital Out, Digital Input, Ground, Audio In, Audio out
Local Storage		Micro SD slot (up to 16 GB)
Capabilities		Digital PTZ, Event System Trigger, Alarm In/Out, Video Control Streaming
Software Integration		ONVIF ® Compliant
Networking & Accessing		
Networking		10BASE-T, 100 BASE-TX
Protocols		HTTP, HTTPS, TCP/IP, IPv4, UDP, SMTP, FTP, PPPoE, DHCP, DDNS, NTP, DNS, ARP, RSTP, RTP, UPnP
Security		Password Protection, HTTPS encryption, User access log
User Environment Requirements		
Minimum System Requirements		CPU: Pentium Dual Core, RAM: 512M, Graphic Card: 128MB Microsoft Windows XP/Vista Home Edition, Internet Explorer 6.0 or above
Hardware Operation & Characteristics		

Power Supply	DC 12V/1A, Less than 8W
Power Over Ethernet	IEEE 802.3af (optional)
Environment	Operation Temperature: 0°C ~ 50°C Operation Humidity: 20% ~ 80% RHG
Dimension	70 (W) x 111 (L) x 70 (H) mm
Certifications	CE, FCC Part 15 Class B, ROHS
I/O Connectors	1 x RJ45 10/100M, 1 x DC Power Jack, 1 x Default setting button, 1 x Micro SD slot; Terminal Block (6 pins), 1 x BNC Video Out 1 x Audio In; 1 x Audio Out

9 Glossary of Terms

ActiveX -
A standard that enables software components to interact with one another in a networked environment, regardless of the language(s) used to create them. web browsers may come into contact with ActiveX controls, ActiveX documents, and ActiveX scripts. ActiveX controls are often downloaded and installed automatically as required.

ARP (Address Resolution Protocol) -
This protocol is used to associate an IP address to a hardware MAC address. A request is broadcast on the local network to discover the MAC address for an IP address.

Autoiris (DC-Iris) -
This special type of iris is electrically controlled by the camera, to automatically regulate the amount of light allowed to enter.

Bitmap -
A bitmap is a data file representing a rectangular grid of pixels. It defines a display space and color for each pixel (or 'bit') in the display space. This type of image is known as a 'raster graphic.' GIFs and JPEGs are examples of image file types that contain bitmaps.
Because a bitmap uses this fixed raster method, it cannot easily be rescaled without losing definition. Conversely, a vector graphic image uses geometrical shapes to represent the image, and can thus be quickly rescaled.

Bit rate -
The bit rate (in kbit/s or Mbit/s) is often referred to as speed, but actually defines the number of bits/time unit and not distance/time unit.

Bonjour -
Also known as zero-configuration networking, Bonjour enables devices to automatically discover each other on a network, without having to enter IP addresses or configure DNS servers. Bonjour is a trademark of Apple Computer, Inc.

Broadband -
In network engineering terms, this describes transmission methods where two or more signals share the same carrier. In more popular terminology, broadband is taken to mean high-speed data transmission.

CCD (Charged Coupled Device) -
This light-sensitive image device used in many digital cameras is a large integrated circuit that contains hundreds of thousands of photo-sites (pixels) that convert light energy into electronic signals. Its size is measured diagonally and can be 1/4", 1/3", 1/2" or 2/3".

CGI (Common Gateway Interface) -
A specification for communication between a web server and other (CGI) programs. For example, a HTML page that contains a form might use a CGI program to process the form data once it is submitted.

CIF (Common Intermediate Format) -
CIF refers to the analog video resolutions 352x288 pixels (PAL) and 352x240 pixels (NTSC). See also Resolution.

Client/Server -
Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfils the request. Typically, multiple client programs share the services of a common server program. A web browser is a client program that requests services (the sending of web pages or files) from a web server.

CMOS (Complementary Metal Oxide Semiconductor) -
A CMOS is a widely used type of semiconductor that uses both negative and positive circuits. Since only one of the circuit types is on at any given time, CMOS chips require less power than chips using just one type of transistor. CMOS image sensors also allow processing circuits to be included on the same chip, an advantage not possible with CCD sensors, which are also much more expensive to produce.

Codec -
In communications engineering, a codec is usually a coder/decoder. Codecs are used in integrated circuits or chips that convert e.g. analog video and audio signals into a digital format for transmission. The codec also converts received digital signals back into analog format. A codec uses analog-to-digital conversion and digital-to-analog conversion in the same chip.

Codec can also mean compression/decompression, in which case it is generally taken to mean an algorithm or computer program for reducing the size of large files and programs.

DC-Iris (Autoiris) -
This special type of iris is electrically controlled by the camera, to automatically regulate the amount of light allowed to enter.

DHCP (Dynamic Host Configuration Protocol) -
DHCP is a protocol that lets network administrators automate and centrally manage the assignment of Internet Protocol (IP) addresses to network devices in a network.
DHCP uses the concept of a 'lease' or amount of time that a given IP address will be valid for a computer. The lease time can vary, depending on how long a user is likely to require the network connection at a particular location.
DHCP also supports static addresses for e.g. computers running web servers, which need a permanent IP address.

DNS (Domain Name System) -
DNS is used to locate and translate Internet domain names into IP (Internet Protocol) addresses. A domain name is a meaningful and easy-to-remember name for an Internet address. For example the domain name www.example.com is much easier to remember than 192.0.34.166. The translation tables for domain names are contained in Domain name servers.

Domain Server -
Domains can also be used by organizations who wish to centralize the management of their (Windows) computers. Each user within a domain has an account that usually allows them to log in to and use any computer in the domain, although restrictions may also apply. The domain server is the server that authenticates the users on the network.

Ethernet -
Ethernet is the most widely installed local area network technology. An Ethernet LAN typically uses special grades of twisted pair wires. The most commonly installed Ethernet systems are 10BASE-T and 100BASE-T10, which provide transmission speeds up to 10 Mbps and 100 Mbps respectively.

Factory default settings -
These are the settings that originally applied for a device when it was first delivered from the factory. If it should become necessary to reset a device to its factory default settings, this will, for many devices, completely reset any settings that were changed by the user.

Firewall -
A firewall works as a barrier between networks, e.g. between a Local Area Network and the Internet. The firewall ensures that only authorized users are allowed to access the one network from the other. A firewall can be software running on a computer, or it can be a standalone hardware device.

Focal length -
Measured in millimeters, the focal length of a camera lens determines the width of the horizontal field of view, which in turn is measured in degrees.

FTP (File Transfer Protocol) -
An application protocol that uses the TCP/IP protocols. It is used to exchange files between computers/devices on networks.

Frame -
A frame is a complete video image. In the 2:1 interlaced scanning format of the RS-170 and CCIR formats, a frame is made up of two separate fields of 262.5 or 312.5 lines interlaced at 60 or 50 Hz to form a complete frame, which appears at 30 or 25 Hz. In video cameras with a progressive scan, each frame is scanned line-by-line and not interlaced; most are also displayed at 30 and 25 Hz.

Frame rate -
The frame rate used to describe the frequency at which a video stream is updated is measured in frames per second (fps). A higher frame rate is advantageous when there is movement in the video stream, as it maintains image quality throughout.

Gain -
Gain is the amplification factor and the extent to which an analog amplifier boosts the strength of a signal. Amplification factors are usually expressed in terms of power. The decibel (dB) is the most common way of quantifying the gain of an amplifier.

Gateway -
A gateway is a point in a network that acts as an entry point to another network. In a corporate network for example, a computer server acting as a gateway often also acts as a proxy server and a firewall server. A gateway is often associated with both a router, which knows where to direct a given packet of data that arrives at the gateway, and a switch, which furnishes the actual path in

and out of the gateway for a given packet.

H.264 -
A standard for video compression, also known as MPEG-4 Part 10.

HTML (Hypertext Markup Language) -
HTML is the set of "markup" symbols or codes inserted in a file intended for display in web browser. The markup tells the browser how to display the page's words and images for the user.
HTTP (Hypertext Transfer Protocol) -
HTTP is the set of rules for exchanging files (text, graphic images, sound, video, and other multimedia files) on the web. The HTTP protocol runs on top of the TCP/IP suite of protocols.

Hub -
A (network) hub is used to connect multiple devices to the network. The hub transmits all data to all devices connected to it, whereas a switch will only transmit the data to the device it is specifically intended for.

IEEE 802.11 -
A family of standards for wireless LANs. The 802.11 standard supports 1 or 2 Mbit/s transmission on the 2.4 GHz band. IEEE 802.11b specifies an 11 Mbit/s data rate on the 2.4 GHz band, while 802.11a allows up to 54 Mbit/s on the 5 GHz band.
Image compression -
Image compression minimizes the file size (in bytes) of an image. Two of the most common compressed image formats are JPEG and GIF.

Interlacing -
Interlaced video is video captured at 50 pictures (known as fields) per second, of which every 2 consecutive fields (at half height) are then combined into 1 frame. Interlacing was developed many years ago for the analog TV world and is still used widely today. It provides good results when viewing motion in standard TV pictures, although there is always some degree of distortion in the image.
To view interlaced video on e.g. a computer monitor, the video must first be de-interlaced, to produce progressive video, which consists of complete images, one after the other, at 25 frames per second. See also Progressive scan.

IP (Internet Protocol) -
The Internet Protocol is a method transmitting data over a network. Data to be sent is divided into individual and completely independent "packets." Each computer (or host) on the Internet has at least one address that uniquely identifies it from all others, and each data packet contains both the sender's address and the receiver's address.
The Internet Protocol ensures that the data packets all arrive at the intended address. As IP is a connectionless protocol, which means that there is no established connection between the communication end-points, packets can be sent via different routes and do not need to arrive at the destination in the correct order.
Once the data packets have arrived at the correct destination, another protocol - Transmission Control Protocol (TCP) - puts them in the right order. See also TCP.

IP Address -
An IP address is simply an address on an IP network used by a computer/device connected to that network. IP addresses allow all the connected computers/devices to find each other and to pass data back and forth.
To avoid conflicts, each IP address on any given network must be unique. An IP address can be assigned as fixed, so that it does not change, or it can be assigned dynamically (and automatically) by DHCP.
An IP address consists of four groups (or quads) of decimal digits separated by periods, e.g. 130.5.5.25. Different parts of the address represent different things. Some part will represent the network number or address, and some other part will represent the local machine address. See also IP (Internet Protocol).

JPEG (Joint Photographic Experts Group) -
Together with the GIF file format, JPEG is an image file type commonly used on the web. A JPEG image is a bitmap, and usually has the file suffix '.jpg' or ".jpeg." When creating a JPEG image, it is possible to configure the level of compression to use. As the lowest compression (i.e. the highest quality) results in the largest file, there is a trade-off between image quality and file size.
kbit/s (kilobits per second) - A measure of the bit rate, i.e. the rate at which bits are passing a given point. See also Bit rate.

LAN (Local Area Network) -
A LAN is a group of computers and associated devices that typically share common resources within a limited geographical area.

LED -
A light-emitting diode (LED) is a semiconductor device that emits visible light when an electric current passes through it. LEDs are widely used as indicator lights on electronic devices. products commonly have LEDs for network, power and status.

Linux -
Linux is an open source operating system within the UNIX family. Because of its robustness and availability, Linux has won popularity in the open source community and among commercial application developers.

MAC address (Media Access Control address) -
A MAC address is a unique identifier associated with a piece of networking equipment, or more specifically, its interface with the network. For example, the network card in a computer has its own MAC address.

Manual iris -
This is the opposite to an autoiris, i.e. the camera iris must be adjusted manually to regulate the amount of light allowed to reach the image sensor.

Mbit/s (Megabits per second) -
A measure of the bit rate, i.e. the rate at which bits are passing a given point. Commonly used to give the 'speed' of a network. A LAN might run at 10 or 100 Mbit/s. See also Bit rate.

Monitor -
A monitor is very similar to a standard television set, but lacks the electronics to pick up regular television signals.

Motion JPEG -
Motion JPEG is a simple compression/decompression technique for networked video. Latency is low and image quality is guaranteed, regardless of movement or complexity of the image. Image quality is controlled by adjusting the compression level, which in turn provides control over the file size, and thereby the bit rate.
High-quality individual images from the Motion JPEG stream are easily extracted. See also JPEG.

Megapixel -
See Pixel.

MPEG (Moving Picture Experts Group) -
The Moving Picture Experts Group develops standards for digital video and audio compression. It operates under the auspices of the International Organization for Standardization (ISO). The MPEG standards are an evolving series, each designed for a different purpose.

Network connectivity -
The physical (wired or wireless) and logical (protocol) connection of a computer network or an individual device to a network, such as the Internet or a LAN.

NTSC (National Television System Committee) -
NTSC is the television and video standard in the United States. NTSC delivers 525 lines at 60 half-frames/second.

PAL (Phase Alternating Line) -
PAL is the dominant television standard in Europe. PAL delivers 625 lines at 50 half-frames/second.

Ping -
Ping is a basic network program used diagnostically to check the status of a network host or device. Ping can be used to see if a particular network address (IP address or host name) is occupied or not, or if the host at that address is responding normally. Ping can be run from e.g. the Windows Command prompt or the command line in UNIX.

Pixel -
A pixel is one of the many tiny dots that make up a digital image. The color and intensity of each pixel represents a tiny area of the complete image.

PoE (Power over Ethernet) -
Power over Ethernet provides power to a network device via the same cable as used for the network connection. This is very useful for IP-Surveillance and remote monitoring applications in places where it may be too impractical or expensive to power the device from a power outlet.

PPP (Point-to-Point Protocol) -
A protocol that uses a serial interface for communication between two network devices. For example, a PC connected by a phone line to a server.

Progressive scan -
Progressive scan, as opposed to interlaced video, scans the entire picture, line by line every sixteenth of a second. In other words,

captured images are not split into separate fields as in interlaced scanning.
Computer monitors do not need interlace to show the picture on the screen, but instead show them progressively, on one line at a time in perfect order, i.e. 1, 2, 3, 4, 5, 6, 7 etc., so there is virtually no 'flickering' effect. In a surveillance application, this can be critical when viewing detail within a moving image, such as a person running. A high-quality monitor is required to get the best from progressive scan. See also Interlacing.

Protocol -
A special set of rules governing how two entities will communicate. Protocols are found at many levels of communication, and there are hardware protocols and software protocols.

Proxy server -
In an organization that uses the Internet, a proxy server acts as an intermediary between a workstation user and the Internet. This provides security, administrative control, and a caching service. Any proxy server associated with a gateway server, or part of a gateway server, effectively separates the organization's network from the outside network and the local firewall. It is the firewall server that protects the network against outside intrusion.
A proxy server receives requests for Internet services (such as web page requests) from many users. If the proxy server is also a cache server, it looks in its local cache of previously downloaded web pages. If it finds the page, it is returned to the user without forwarding the request to the Internet. If the page is not in the cache, the proxy server, acting as a client on behalf of the user, uses one of its own IP addresses to request the page from another server over the Internet. When the requested page is returned, the proxy server forwards it to the user that originally requested it.

Resolution -
Image resolution is a measure of how much detail a digital image can hold: the greater the resolution, the greater the level of detail. Resolution can be specified as the number of pixel-columns (width) by the number of pixel-rows (height), e.g. 320x240. Alternatively, the total number of pixels (usually in megapixels) in the image can be used. In analog systems it is also common to use other format designations, such as CIF, QCIF, 4CIF, etc.

RTCP (Real-Time Control Protocol) -
RTCP provides support for real-time conferencing of groups of any size within an intranet. This support includes source identification and support for gateways like audio and video bridges as well as multicast-to-unicast translators.
RTCP offers quality-of-service feedback from receivers to the multicast group as well as support for the synchronization of different media streams.

RTP (Real-Time Transport Protocol) -
RTP is an Internet protocol for the transport of real-time data, e.g. audio and video. It can be used for media-on-demand as well as interactive services such as Internet telephony.

RTSP (Real Time Streaming Protocol) -
RTSP is a control protocol, and a starting point for negotiating transports such as RTP, multicast and Unicast, and for negotiating codecs.
RTSP can be considered a 'remote control' for controlling the media stream delivered by a media server. RTSP servers typically use RTP as the protocol for the actual transport of audio/video data.

Router -
A device that determines the next network point to which a packet should be forwarded on its way to its final destination. A router creates and/or maintains a special routing table that stores information on how best to reach certain destinations. A router is sometimes included as part of a network switch. See also switch.

Server -
In general, a server is a computer program that provides services to other computer programs in the same or other computers. A computer running a server program is also frequently referred to as a server. In practice, the server may contain any number of server and client programs. A web server is the computer program that supplies the requested HTML pages or files to the client (browser).

Sharpness -
This is the control of fine detail within a picture. This feature was originally introduced into color TV sets that used notch filter decoders. This filter took away all high frequency detail in the black and white region of the picture. The sharpness control attempted to put some of that detail back in the picture. Sharpness controls are mostly superfluous in today's high-end TVs. The only logical requirement for it nowadays is on a VHS machine.

SMTP (Simple Mail Transfer Protocol) -
SMTP is used for sending and receiving e-mail. However, as it is 'simple,' it is limited in its ability to queue messages at the receiving end, and is usually used with one of two other protocols, POP3 or IMAP. These other protocols allow the user to save

messages in a server mailbox and download them periodically from the server.
SMTP authentication is an extension of SMTP, whereby the client is required to log into the mail server before or during the sending of email. It can be used to allow legitimate users to send email while denying the service to unauthorized users, such as spammers.

Sockets -
Sockets are a method for communication between a client program and a server program over a network. A socket is defined as 'the endpoint in a connection. Sockets are created and used with a set of programming requests or 'function calls' sometimes called the sockets application programming interface (API).

SSL/TSL (Secure Socket Layer/Transport Layer Security)
These two protocols (SSL is succeeded by TSL) are cryptographic protocols that provide secure communication on a network. SSL is commonly used over HTTP to form HTTPS, as used e.g. on the Internet for electronic financial transactions. SSL uses public key certificates to verify the identity of the server.

Subnet/subnet mask -
A subnet is an identifiably separate part of an organization's network. Typically, a subnet may represent all the machines at one geographic location, in one building, or on the same local area network (LAN). Having an organization's network divided into subnets allows it to be connected to the Internet with a single shared network address.
The subnet mask is the part of the IP address that tells a network router how to find the subnet that the data packet should be delivered to. Using a subnet mask saves the router having to handle the entire 32-bit IP address; it simply looks at the bits selected by the mask.

Switch -
A switch is a network device that connects network segments together, and which selects a path for sending a unit of data to its next destination. In general, a switch is a simpler and faster mechanism than a router, which requires knowledge about the network and how to determine the route. Some switches include the router function. See also Router.

TCP (Transmission Control Protocol) -
TCP is used along with the Internet Protocol (IP) to transmit data as packets between computers over the network. While IP takes care of the actual packet delivery, TCP keeps track of the individual packets that the communication (e.g. requested a web page file) is divided into, and, when all packets have arrived at their destination, it reassembles them to re-form the complete file.
TCP is a connection-oriented protocol, which means that a connection is established between the two end-points and is maintained until the data has been successfully exchanged between the communicating applications.

Telnet -
Telnet is a simple method with which to access another network device, e.g. a computer. The HTTP protocol and the FTP protocols allow you to request specific files from remote computers, but do not allow you logon as a user of that computer. With Telnet, you log on as a regular user with whatever privileges you may have been granted for specific applications and data residing on that computer.

UDP (User Datagram Protocol) -
UDP is a communications protocol that offers limited service for exchanging data in a network that uses the Internet Protocol (IP). UDP is an alternative to the Transmission Control Protocol (TCP). The advantage of UDP is that it is not required to deliver all data and may drop network packets when there is e.g. network congestion. This is suitable for live video, as there is no point in re-transmitting old information that will not be displayed anyway.

Unicast -
Communication between a single sender and a single receiver over a network. A new connection is established for each new user.
URL (Uniform Resource Locator) -
An "address" on the network.

Varifocal lens -
A varifocal lens provides a wide range of focal lengths, as opposed to a lens with a fixed focal length, which only provides one.

WAN (Wide-Area-Network) -
Similar to a LAN, but on a larger geographical scale.

W-LAN (Wireless LAN) -
A wireless LAN is a wireless local area network that uses radio waves as its carrier: where the network connections for end-users are wireless. The main network structure usually uses cables.

Web server -

A web server is a program, which allows web browsers to retrieve files from computers connected to the Internet. The web server listens for requests from web browsers and upon receiving a request for a file sends it back to the browser.
The primary function of a web server is to serve pages to other remote computers; consequently, it needs to be installed on a computer that is permanently connected to the Internet. It also controls access to the server whilst monitoring and logging server access statistics.

WEP (Wireless Equivalent Privacy) -
A wireless security protocol, specified in the IEEE 802.11 standard, which is designed to provide a wireless local area network (WLAN) with a level of security and privacy comparable to that usually expected of a wired LAN. Security is at two different levels; 40-bit and 128-bit encryption. The higher the bit number, the more secure the encryption.

WPA-PSK (Wi-Fi Protected Access - Pre-Shared Key) -
This wireless encryption method uses a pre-shared key (PSK) for key management. Keys can usually be entered as manual hex values, as hexadecimal characters, or as a Passphrase. WPA-PSK provides a greater degree of security than WEP.

WPA Enterprise -
Instead of a pre-shared key or passphrase, WPA Enterprise uses 802.1 x RADIUS servers and an Extensible Authentication Protocol (EAP) for authentication. The enhanced WPA2 uses Advanced Encryption Standard (AES) instead of Temporal Key Integrity Protocol (TKIP) to provide stronger encryption mechanism. This encryption method provides greater security, but is difficult to configure and is not recommended for home users.

Zoom lens -
A zoom lens can be moved (zoomed) to enlarge the view of an object to show more detail.

End of Document